

**FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.**

[PRICE 6D.]

The FOLLOWING PARCELS OF LEAD ORE—viz.:



**BOILER EXPLOSION.**—The boiler of the *Firebrand*, one of the steam-tugs employed on the River Tyne, burst one day last week, as the vessel was running into Shields harbour. One of the tubes gave way, and the steam rushed forward underneath the deck, and destroyed the fore-cabin, shattering the bulkhead and the entire wooden partitions to pieces. Fortunately, no one was below at the time; but the steam rushed up one of the hatchways, and scalded a boy, named Foreman, in the face. Deficiency of water is said to have been the immediate cause of the accident.

**MARKWICK'S PATENT CHEST PROTECTORS.**—This is a TRAVELLING CHEST PROTECTOR, to wear over the shirt, will be introduced; and, as it must meet with general patronage, the attention of holders and buyers is called to these valuable articles, which are also well adapted for ladies' wear, under a shawl, during damp or piercing cold weather. MARKWICK'S IMPERMEABLE PELINE is invaluable in cases of gout, rheumatism, the doloureux, sore throat, cold, and also dry hot feet and hands. Socks, gloves, knee caps, head caps, throat protectors, &c., are made from this material, from which any other article may be had, according to the order of the medical or surgical adviser. MR. ALFRED MARKWICK'S NEW WORK "ON THE SKIN" just published by the Patent Epithem Company, price 2s. 6d., may be had of all respectable chemists in every town in England.

32, KING WILLIAM-STREET, CITY.

**SIR JAMES MURRAY'S FLUID MAGNESIA.**—Prepared under the immediate care of the inventor, and established for upwards of 30 years by the profession, for removing BILE, ACIDITIES, and INDIGESTION—restoring APPETITE, preserving a moderate state of the bowels, and dissolving uric acid in GRAVEL and GOUT; also as an easy remedy for SEA SICKNESS, and for the febrile affection incident to childhood it is invaluable. On the value of Magnesia, as a remedial agent, it is unnecessary to enlarge; but the fluid preparation of Sir James Murray is now the most valued by the profession, as it entirely avoids the possibility of those dangerous concretions usually resulting from the use of the article in powder, and in the over-dosed liquids of detected imitations. Sold by the sole consignee, Mr. Bailey, of North-street, Wolverhampton; and by all wholesale and retail druggists and medicine agents throughout the British Empire, in bottles, 1s. 2s. 6d., 3s. 6d., 4s. 6d., 11s., and 21s. each.

The Acidulated Syrup, in bottles, 3s. each.

N.B.—Be sure to ask for "Sir James Murray's Preparation," and to see that his name is stamped on each label, in green ink, as follows:—"James Murray, Physician to the Lord Lieutenant."

**UNDER ROYAL PATRONAGE.**

**KEATING'S COUGH LOZENGES** are indispensably necessary, both for the Cure and Prevention of Coughs, Asthma, and all Pulmonary Complaints, during this changeable weather.

**CURE OF COUGH OF EIGHT YEARS' STANDING, ACCOMPANIED WITH SHORTNESS OF BREATH!**

Birkenhead, near Liverpool, Jan. 8, 1847. Sir, I have been afflicted with a severe cough and shortness of breath for nearly eight years, and after trying various remedies, did not find myself any better. I purchased a small box of KEATING'S LOZENGES of you, from which I found great benefit. The second box, 2s. 9d. size, completely cured me, and I can now breathe more freely, and am as free from cough as ever I was in my life. Hoping that others, similarly afflicted, will find themselves cured by a remedy so simple and so safe.

I remain, Sir, yours faithfully, WILLIAM ANDERSON.

To Mr. Geo. H. Howell, chemist, 72, Dale-street, Liverpool.

Prepared and sold, in boxes at 1s. 4d.; 2s. 9d., 4s. 6d., and 10s. 6d. each, by THOMAS KEATING, chemist, &c., No. 79, St. Paul's Churchyard, London.

N.B.—The safety attendant on the use of these Lozenges, together with their agreeable flavour, has given them a well-deserved popularity.

**LEMONNIER, HAIR-WORKER to the Queen,** and Member of the Académie de l'Industrie, and who obtained a Silver and Platinum Medal at the Exhibition, has just INVENTED several NEW DESIGNS, as Palm Trees, Wreaths, Knots, and Cyphers, which he executes with hair in its natural state, without using gum or other cement. A variety of Trees executed by a mechanical process.

No. 13, RUE DU COQ SAINT HONORE, PARIS.

**ON NERVOUS DEBILITY & GENERATIVE DISEASES.**

Just published, the Twentieth Thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, to any address, secure from observation, for 3s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, "MANHOOD: the Causes of its Premature Decline, with Plain Directions for its Perfect Restoration." A radical essay on those diseases of the generative organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in Youth, Manhood, and Old Age; with practical remarks on the treatment and cure of nervous debility, mental depression, impotency, syphilis, and other uro-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.

By J. L. CURTIS and CO., Consulting Surgeons, 7, Friar-street, Soho-square, London.

**REVIEWS OF THE WORK.**—"Manhood," a medical work, to the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions, whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.

"Chronicle." We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, a preceptor, or a clergyman.—"Sun, Evening Paper." Curtis on Manhood should be in the hands of youth and old age. It is a medical publication, ably written, and develops the treatment of a class of painful malady which has too long been the prey of the ignorant and the designing.—"United Service Gazette."

Published by the authors, and may be had at their residence; sold also by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

**ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY,**

With 25 coloured engravings. Just published (in a sealed envelope), price 2s. 6d.; or post-paid to any address, 3s. 6d., in Post-office order or stamps.

**SELF-PRESERVATION: A Medical Treatise, on Marriage, and**

on those Secret Infirmities and Disorders of Youth and Maturity which are usually acquired at an early period of life, which tend to destroy physical and mental energy, ardour, passion, and all the attributes of manhood. Illustrated with twenty-five coloured engravings, on the anatomy, physiology, and diseases of the urinary and reproductive organs, explaining their various structures, uses, and functions, and showing the injuries that are produced in them, by solitary habits, excesses and infection. With practical observations on the treatment of nervous debility, local and constitutional weakness, syphilis, stricture, and other diseases of the urethra. By SAMUEL LA'MBERT, consulting surgeon, 9, Bedford-street, Bedford-square, London. Matriculated Member of the University of Edinburgh, Honorary Member of the London Hospital Medical Society, Licentiate of Apothecaries' Hall, London.

**REVIEWS OF THE WORK.**

"The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders, arising from the filices and failures of early indiscretion. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by its personal, many questions may be satisfactorily replied to, that admit of no appeal, even to the most confidential friend."—"Eva."

"Unquestionably this is a most extraordinary and skillful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown and concealed from the conductors of those establishments, and which cannot be too strongly reprobated and condemned."

The drawings that accompany the work are clear and explanatory; and the work may be had direct from the author's residence, and will be forwarded, free by post, to any address for 3s. 6d. in postage stamps.—9, Bedford-street, Bedford-square.

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Published by the author, and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hanny and Co., 63, Oxford-street; Strang, 31, Tichborne-street, Quadrant, Oldham-street, London; Newton, 16, Chesham-street, Liverpool; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications, Generative Impotency, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 3s. 6d. in postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities**

and decay of the generative system, from excessive indulgence, infection, and the immediate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings. By R. & L. FERRY & CO., 10, Berners-street, Oxford-street, London. Published by the authors; sold by Strang, 31, Paternoster-row; Hanny, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenisle-street, Edinburgh; and, in a sealed envelope, by all booksellers.—"Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Friar-street, Soho-square, London; and at any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 3s. 6d. in postage stamps."

## SPEED AND POWER ON THE NARROW GAUGE.

During Monday and Tuesday we availed ourselves, through the courtesy of Mr. Crook, the secretary, and Capt. Hulse, the general manager of the London and North-Western Company, of several opportunities of witnessing the workings of Crumpton's engine, the *London*, and Stephenson's engine, the *Snake*. The results prove that we were correct in stating, that the narrow-gauge engines are having their capacity for speed and power slowly, but steadily, increased.

On Monday we took a trip down with the *Snake*, which was attached to the 16 o'clock morning mail train—down also with the *London*, which was attached to the 8.30 afternoon stopping train, and up with *Wolverton* in the evening, with the same engine attached to the night express train. Yesterday morning we again went down with the 10 o'clock mail express, taken, as on the previous morning, by the *Snake*, and in the afternoon with the *London*, which was coupled to the 5 o'clock express train.

It was understood, on the Saturday, that the two engines were to take the 16 o'clock morning mail express down to Wolverton on alternate days; but it was subsequently considered, that it would be the fairer way to make the *London* work trains similar to those that had been previously taken by the *Snake*. The result of this determination was, that the *Snake* worked the morning express mail on Monday and yesterday, but the order for her to take out the train on Monday reached those in authority at the Camden Town station at an hour that gave the driver scarcely sufficient time to get his engine in the best possible order. She came down the Camden Tunnels, it is true, with hot-water in her tender, but not quite so hot as could be desired in what might be termed an experimental trip. The train on Monday morning was late, and a slight side wind prevailed throughout the trip to Wolverton. The following is the working in detail. The load taken was 11 carriages, or about 55 tons. It is to be recollected, that, for nearly the whole distance to Tring, nearly 23 miles, the line rises above 16 feet per mile.



## MINES, METALLURGIC ESTABLISHMENTS, &amp;c., OF BELGIUM.

(Continued from last week's Mining Journal.)

## IV. SUMMARY RELATIVE TO THE COAL MINES.

The following is a general summary of the returns relative to the coal mines of the whole kingdom:—

	1839.	1840.	1841.	1842.	1843.	1844.
Mines conceded ..	166	175	183	188	195	201
Mines conceded provisionally ..	136	124	117	113	110	108
Surface of mines conceded (hec.) ..	65,032 60	69,176 0	71,773 40	74,589 80	77,083 17	80,161 0
Surface of mines conceded provisionally (hec.) ..	57,617 70	54,757 70	52,445 20	50,336 90	47,799 48	46,277 43
Mines worked ..	257	241	237	229	219	212
Mines left unworked ..	43	58	63	71	86	97
Sites of extraction in activity ..	483	497	460	450	427	406
Ditto, for which constructions were making ..	134	109	110	118	122	134
Number of workmen engaged in the pits ..	37,047	39,150	37,629	39,902	37,503	38,490
Quantity extracted (tons) ..	3,479,160	3,999,964	4,027,766	4,141,463	3,982,274	4,445,240
Value (francs) ..	45,123,995	46,343,285	42,511,300	38,088,326	36,177,405	39,844,191
Average production of each shaft (tons) ..	7203	7907	8756	9203	9326	10,949
Do. by 100 men (do.) ..	9301	10,038	10,704	10,376	10,618	11,549

The annual production of coal in Mons, Charleroi, and Liege—the three great centres of production—shows that it increased, from 1836, from 584,000 to 996,040 tons. Charleroi increased its production from 743,000 to 1,276,500 tons; but, in the eight years, the production of Mons underwent some very striking fluctuations. The production of Namur and Huy increased moderately to about 1839; but, at that time, the production of the former increased, and that of Huy diminished.

The returns set forth some details respecting the connection of companies with coal mines. The number of mines acquired by companies, called *sociétés anonymes*, or in which they were interested, showed, from 1834 to 1838, an increase of 194 per cent. of the portions of the mines worked, and of 42 per cent. in the production; and, from 1839 to 1844, the former diminished 16 per cent., but the production increased 27 per cent. The increase in the parts worked in the pits held by old companies increased 56 per cent., and the production 27 per cent., in the period from 1844 to 1838; and, in the period from 1839 to 1844, the former diminished 10 per cent., and the latter increased 27 per cent.

## METALLIC MINES.—I. PROVINCE OF HAINAUT.

During the period from 1839 to 1844 the number of metallic mines did not increase. There were only two iron mines situated in the district of Charleroi, in the communes of Gerpinnes and La Buisière. They comprised an extent of 2559 hectares of land. In other communes, also, iron ore was allowed to be procured, in virtue of a simple declaration made to the provincial administration, conformably to article 59 of the law of 21st April, 1810. The number of communes in this province in which the free working for iron ores was allowed was, in 1839, 7; 1840, 7; 1841, 9; 1842, 7; 1843, 6; 1844, 7.

The two *hauts-fourneaux* erected at Pommerœul having ceased to be carried on in 1841, the extraction of iron ore ceased almost at the same time in the first division of this province. The works were carried on not far from Tournay, in the communes of Vaula, Guarin-Ramecroix, and Chercq. The working of the deposits of ore took place throughout all the province by means of subterranean galleries. The number of such deposits in activity was—in 1839, 52; 1840, 51; 1841, 78; 1842, 48; 1843, 30; 1844, 72. The maximum depth of such workings was—in 1839, 25 metres; 1840, 25; 1841, 55; 1842, 28; 1843, 35; 1844, 32 metres. The average depth in each of these years was 7 metres, 13, 16, 26, 28, 27 metres. To extract the ore, the machine, called a *treuil*, was everywhere employed. In the mine of La Buisière there was a little steam-engine, of eight horse-power, to take off the water; but, in the other mines, the same machines were employed for removing the water as for extracting the ore.

The number of workmen employed in the iron mines of this province was—in 1839, 120; 1840, 146; 1841, 306; 1842, 195; 1843, 102; 1844, 273. The average day's pay of each man was—in 1839, 1 fr. 25 c.; 1840, 1 fr. 35 c.; 1841, 1 fr. 35 c.; 1842, 1 fr. 20 c.; 1843, 1 fr.; 1844, 1 fr. 20 c.

The quantities of iron ore extracted were—in 1839, 35,700 tons; 1840, 48,300; 1841, 40,953; 1842, 36,756; 1843, 15,673; 1844, 30,137 tons. The value of these ores, when washed, was, for each of those years, 225,480 fr., 317,126, 338,721, 236,664, 119,767, 228,606 fr.

All the ore extracted was employed in the metallurgic establishments of the province of Hainaut. The establishments, however, of the second district obtained the greater part of their supplies from the province of Namur.

## II. PROVINCE OF NAMUR AND LIEGE.

The metallic mines conceded were—in 1839, 22; 1840, 25; 1841, 26; 1842, 26; 1843, 26; 1844, 28. The surface conceded was, in each of those years, in hectares, 29,165, 30,032, 30,337, 30,337, 30,337, 30,630. Of the 28 mines, in 1844, 16 were of iron, 6 lead, 1 lead and pyrites, 2 pyrites of iron, in the first district; 2 of lead, 1 of lead and iron, in the fourth district. Free concessions of iron ore, in some communes of this province, were established, in execution of the law of 1810. The number of such communes was—in 1839, 27; 1840, 33; 1841, 33; 1842, 36; 1843, 32; 1844, 37. In the number of places which were worked for the extraction of ore, some were open to the sky, others were underground. The number was, of the former—in 1839, 66; 1840, 53; 1841, 50; 1842, 47; 1843, 63; 1844, 62; of the latter—in 1839, 383; 1840, 356; 1841, 313; 1842, 431; 1843, 379; 1844, 366. From the manner in which the workings were carried on, it is impossible to state the average depth of each with correctness; but, in the third district, it was 20 metres, and in the fourth 15 metres.

The extraction of ores took place by means of spades and wheelbarrows, and by *treuils*. The number of workings in which the former was employed was—in 1839, 62; 1840, 50; 1841, 48; 1842, 43; 1843, 59; 1844, 57; and the latter, in each of those years, 387, 359, 315, 436, 392, 403. In 1843 a gallery served for the conveyance of ore in one of the workings of the province of Luxembourg. It was only in the third district that steam-engines were employed for removing water from mines. The number in the province of Namur was—in 1839, 5 of 70 horse-power; 1840, 6 of 85; 1841, 7 of 99; 1842, 8 of 117; 1843, 9 of 153; 1844, 9 of 209 horse-power. There also existed, in the second division of the province, eight galleries for taking off water. In some small workings *treuils* were employed for the same purpose.

The number of men employed was—in 1839, 1318; 1840, 1217; 1841, 1187; 1842, 1565; 1843, 1384; 1844, 1348. The men who extracted iron ore generally took the job at their own risk, so that it is impossible to state the average of their daily salary, as it varied immensely—the men sometimes making very large profits, and at others getting almost nothing.

The following was the quantity of the ores produced, and their value:—

	1839.	1840.	1841.	1842.	1843.	1844.
Production (tons) ..	113,431	116,213	116,354	144,851	127,907	152,954
Value (francs) ..	998,424	874,586	824,773	1,048,134	903,081	965,761
Production (tons) ..	135,100	63,350	34,338	33,192	347,350	325
Value (francs) ..	21,758	11,927	8011	23,746	29,827	23,000
Production (tons) ..	500	1900	1700	1700	1830	1830
Value (francs) ..	10,000	24,000	34,000	34,000	30,600	30,600

Three-fourths of the iron ore extracted in the third district were consumed in the provinces of Hainaut and Liege—the other fourth went to the province of Namur. All the iron ore of the fourth district was employed in the establishments of Liege and of the Luxembourg; but the latter received from that portion of the territory which is ceded to Holland about half the supply of its *hauts-fourneaux*, which required the ores of Petange and Differdange to make the mixture required for the manufacture of what are called *fers tendres* and *fers forts*. The lead ore furnished by the province of Namur was consumed in the province. The whole of the lead from the mine of Longuilly was exported to Prussia. The pyrites of iron was consumed exclusively in the manufactory of chemical products annexed to the glass manufactory of Oignies in Hainaut.

## III. PROVINCE OF LIEGE.

The number of metallic mines conceded in this province did not vary in the period from 1839 to 1844: it was ten; consisting of mines of iron, lead, and calamine. There were, also, in the province, five concessions for

the working of alum schistes. The superficial extent of these fifteen concessions was 12,159 hectares. Iron ore was also obtained in different localities, pursuant to the law of April, 1810. The number of communes in which free workings for ore were carried on was—in 1839, 35; 1840, 34; 1841, 31; 1842, 30; 1843, 9; 1844, 20. With the exception of three places, in which the working of metallic mines was completely open, all the different deposits were underground. The number of underground workings was—in 1839, 112; 1840, 102; 1841, 95; 1842, 66; 1843, 45; 1844, 88.

The ores were brought to the surface by horizontal galleries, or by the aid of *treuils*. The steam-engines employed to take off the water were—1839, 1 machine, representing 8-horse power; 1840, 1, 8-horse power; 1841, none; 1842, 2, 37-horse power; 1843, 2, 37-horse power; 1844, 3, 67-horse power. In addition to the above, two hydraulic wheels, of 50 and 120-horse power, were also employed for the same purpose, as were likewise 12 galleries. The number of men engaged in working the metallic mines in this province was—in 1839, 704; 1840, 710; 1841, 793; 1842, 662; 1843, 715; 1844, 1187. Their average daily pay was—in 1839, 1 fr. 37 c.; 1840, 1 fr. 39 c.; 1841, 1 fr. 36 c.; 1842, 1 fr. 46 c.; 1843, 1 fr. 32 c.; 1844, 1 fr. 15 c. The quantities of ore produced in the province of Liege, and the value of them, were as follows:—

	1839.	1840.	1841.	1842.	1843.	1844.
Production (tons) ..	43,546	27,298	22,666	19,101	20,794	21,286
Value (francs) ..	499,326	279,184	222,161	173,932	196,760	178,978
Production (tons) ..	36	3	—	712	402	325
Value (francs) ..	3960	330	—	78,320	41,730	68,990
Production (tons) ..	18,148	20,482	18,830	14,466	25,668	22,689
Value (francs) ..	721,205	804,990	741,550	716,440	992,410	1,461,190
Production (tons) ..	4001	3565	3096	4914	9405	7403
Value (francs) ..	5321	4812	4180	5535	12,508	13,233

## IV. SUMMARY OF METALLIC MINES.

The following is the general summary relative to the working of metallic mines in the whole kingdom.—The production of iron ore did not present any very remarkable variations. The excessive extent to which the workings for that ore were pushed in 1836, appeared to threaten a reaction from 1838; but there was only a return to the normal state, to an average activity proportioned to the wants of the period. The extraction of lead ore, and of alum schistes, received a somewhat considerable extension in 1842, 1843, and 1844. That of zinc underwent no alteration worthy of particular mention. The employment of 6630 tons of pyrites in five years, for the manufacture of sulphuric acid, is a remarkable fact.

The number of concessions of metallic mines, &c., was as follows for the whole kingdom:—

	Number of concessions, including those of schistes.	Surface conceded. Hectares.	Communes with free workings of iron ore.
1839 ..	39	43,883 33	69
1840 ..	42	44,750 33	74
1841 ..	43	45,053 33	73
1842 ..	43	45,053 33	73
1843 ..	43	45,053 33	73
1844 ..	45	45,148 00	54

The number of workings was—in 1839, open 68—underground, 547; 1840, 54—509; 1841, 51—486; 1842, 48—545; 1843, 63—454, 1844, 63—526. The number of steam-engines, for taking off water, was—1839, 7 machines, representing 86-horse power; 1840, 8, 101-horse power; 1841, 8, 107-horse power; 1842, 11, 162-horse power; 1843, 12, 198-horse power; 1844, 13, 284-horse power. From 1839 to 1844, the number of workmen increased from 2142 to 2808. The production, which underwent some considerable changes, was, in 1844, 651 tons of lead, of the value of 91,990 fr.; 214,377 tons of washed iron, value 1,337,345 fr.; 1530 tons of pyrites, value 30,600 fr.; 22,689 tons of calamine, value 1,461,190 fr.; and 7402 tons alum schistes, value 13,233 fr.

## ESTABLISHMENTS FOR THE TREATMENT OF ORES.—I. PROVINCE OF HAINAUT.

In 1843 the province of Hainaut possessed 120 mineral establishments, in 96 of which iron ores were treated, and 24 were occupied in the manufacture of glass. They employed 2679 men, 55 steam-engines of 2389-horse power, 5 hydraulic wheels, and 24 *manèges*. In 1844 the number of these establishments slightly increased: it became 125—100 for iron, 25 for glass—employing 2709 men, 57 steam-engines of 2318-horse power, 8 hydraulic wheels, and 24 *manèges*. Four-fifths of these establishments were situated in the arrondissement of Charleroi. From 1843 to 1844 the number of establishments did not increase; but, in the latter year, the production was greater.

In 1843, there were, in Hainaut, 18 *hauts-fourneaux* in activity—10 of which were fed with charcoal, 8 with coke; in 1844, there were 12 furnaces in activity—2 of the former class, 10 of the second. The number of *affineries* in activity, in 1843, was 55—of which 12 were fed with charcoal, 43 with coke; but, in 1844, there were only 50 in activity—13 charcoal, 37 coke. The average price of cast-iron, in 1843, was 92 fr. per ton; 1844, 89 fr.;—iron, 1843, 213 fr.; 1847, 203 fr.

The following tables show the quantity and value of the products, and the quantity and value of the fuel consumed in the different descriptions of establishments, in 1843 and 1844:—

Designation of Furnaces, &c.	Description of manufacture.	Production.		Fuel consumed. Tons.
		Quantity. Tons.	Value. Francs.	
Hauts-fourneaux { Coke ..	Cast-iron ..	36,849	3,302,580	66,909 coke
{ Charcoal ..	ditto ..	2,048	265,590	2,860 char.
Affineries of English system	Iron ..	16,989	3,478,639	39,869 coal
Iron ..	Charcoal ..	1,485	462,625	2,267 char.
Fonderies ..	Iron en verge ..	166	31,800	36 coke
Martinettes of Platineries ..	Iron ouvré ..	1,391	543,068	5,068 ditto
Iron Fonderies ..	Cast-iron moulée ..	4,637	970,593	3,299 ditto
Manufactories of Glass ..	Glass ..	—	3,784,145	57,247 ditto

Designation of Furnaces, &c.	Description of manufacture.	Production.		Fuel consumed. Tons.
		Quantity. Tons.	Value. Francs.	
Hauts-fourneaux { Coke ..	Cast-iron ..	41,956	3,646,111	65,494 coke
{ Charcoal ..	ditto ..	1,995	259,350	2,894 char.
Affineries of English system	Iron ..	18,058	3,551,738	40,700 coal
Iron ..	Charcoal ..	1,346	398,793	1,447 char.
Fonderies ..	Iron en verge ..	337	97,118	657 coal
Martinettes of Platineries ..	Iron ouvré ..	1,490	706,150	94 ditto
Iron Fonderies ..	Cast-iron moulée ..	3,607	764,861	4,937 ditto
Manufactories of Glass ..	Glass ..	—	3,977,629	38,709 ditto

## II. PROVINCE OF NAMUR.

The number of mineralurgic establishments was 82 in 1843 and 1844. In 61 iron was treated or prepared, in 1 steel, 1 lead, 8 copper, 1 glass. In 1843, the number of workmen was 877; it descended to 865, in 1844. There were 7 steam-engines, of 128-horse power; 124 hydraulic machines; 3 machines worked by men, and 1 by horses. In 1843 and 1844, the production of cast-iron and iron declined. In the former year there were 22 *hauts-fourneaux* fed by wood, 3 by coke; 40 *affineries* by coke, 1 by coal. The production was 20,794 tons of cast-iron—value, 2,167,290 fr.; and 4138 tons iron—value, 1,249,130 fr. But, in 1844, there were only 16 *hauts-fourneaux* by charcoal, 3 coke; 43 *affineries* in activity (charcoal), 3 coal. The production was 17,541 tons cast-iron—value, 1,876,196 fr.; and 1671 tons iron—value, 477,699 fr.

The diminution in the cast-iron was principally in the furnaces fed by coke. The average prices per ton were—in 1843, cast-iron, 104 fr.; iron, 302 fr.; in 1844, cast-iron, 107 fr.; iron, 286 fr. Among the descriptions of iron elaborated were 50,610 kilograms sheet-iron—value, 187,257 fr.

In 1824, the quantity of lead manufactured was 106,560 kilograms—value, 48,294 fr. The production of glass and crystal, in 1844, may be estimated at 300,000 fr. The mineralurgic establishments of Namur consumed, in 1844, about 4167 tons of coal, 10,010 tons of coke, and 23,205 tons of charcoal.

## III. PROVINCE OF LUXEMBOURG.

All the metallurgic establishments of this province, in 1844, 31 in number, were devoted to the treatment and elaboration of iron. They employed, in 1843, 55 men, 44 hydraulic wheels; and in 1844, 163 men, and 30 hydraulic wheels. At the end of 1844, there were no steam-engines in the province. In 1843, there were 8 *hauts-fourneaux* fed by charcoal, and 10 *affineries*. The production was 5480 tons of cast-iron—value, 699,745 fr.; and 865 tons of iron—value, 249,550 fr. In 1844, there were only 7 furnaces, and 5 *affineries* for charcoal. The production was, 3428 tons cast-iron—value, 477,142 fr.; and 231 tons iron—value, 72,394 fr. The

average price was—1843, cast-iron, 128 fr. the ton; 1844, 130 fr.; 1843, iron, 288 fr.; 1844, 313 fr. The quantity of charcoal consumed was about 6712 tons.

## IV. PROVINCE OF LIEGE.

In 1843, there were 73 metallurgic establishments in this province; in 1844, 79—of which 62 were iron, 1 steel, 2 lead, 4 copper, 6 zinc, 1 alum, 3 glass. The number of men employed, in 1843, was 4507, steam-engines 53, of 1889-horse power, 45 water courses; 1844, 4855 men, 51 steam-engines of 1803-horse power; 45 water courses. The number of furnaces in activity, in 1843, was 10—of which 1 was fed with charcoal, 9 with coke; in 1844, there were 11—of which 1 was charcoal, and 10 coke. In 1843, the number of *affineries* in activity was 13—of which 5 were fed by charcoal, 8 by coal; in 1844, there were 12—5 of the first category, 7 of the second. The average price of cast-iron was—1843, 82 fr. the ton; 1844, 94 fr.; iron, 1843, 187 fr.; 1844, 243 fr. The quantities and value of the products of this province were—1843, 32,718 tons cast-iron—value, 2,675,640 fr.; 33,245 tons iron—value, 6,228,650 fr.; 6992 tons zinc—value, 1,160,210 fr.; 280 tons lead—value, 123,200 fr.; 520 tons brass—value, 1,272,000 fr.; 400 tons alum—value, 96,000 fr.; in 1844, 41,958 tons cast-iron—value, 3,301,100 fr.; 151 tons lead—value, 66,440 fr.; 877 tons brass—value, 2,142,340 fr.; 480 tons alum—value, 120,000 fr. Exact details respecting the production of glass could not be obtained. The quantity of coal consumed, in 1843, was 302,742 tons—1844, 314,702 tons; charcoal, 1850 tons—1844, 1850 tons.

## V. PROVINCE OF BRABANT.

In 1844, there were 12 metallurgic establishments—10 for iron, 1 for lead, and 1 for copper. They employed 144 men, and 3 steam-engines of 31-horse power. The furnace (charcoal) of Leefdael, *arrondissement* of Louvain, was not in activity either in 1843 or 1844.

## VI. SUMMARY OF MINERALURGIC ESTABLISHMENTS.

The number of mineralurgic establishments, in the whole kingdom, was 318 in 1843, 329 in 1844. They were as follows:—

HAINAUT.—1843, 96 iron and 24 glass; 1844, 100 iron and 25 glass.  
NAMUR.—1843 and 1844, 71 iron, 1 steel, 1 lead, 8 copper, 1 glass.  
LUXEMBOURG.—1843 and 1844, 31 iron.  
LIEGE.—1843, 58 iron, 2 lead, 4 copper, 5 zinc, 1 alum, and 3 glass; 1844, 62 iron, 1 steel, 2 lead, 4 copper, 6 zinc, 1 alum, and 3 glass.

BRABANT.—1843 and 1844, 10 iron, 1 lead, 1 copper. In 1843, there were 53 furnaces in activity—33 of which were fed by charcoal, 20 by coke; 1844, 49 furnaces—of which 26 were of charcoal, and 23 of coke. The number of *affineries* in activity was 119 in 1843—of which 67 were charcoal, 52 coal; in 1844, there were 113—of which 76 were charcoal, 47 coal. In 1843, the production was 97,889 tons cast-iron—value, 9,108,845 fr.; 56,722 tons—value, 11,668,594 fr.; in 1844, the production was 106,878 tons cast-iron—value, 9,294,599 fr.; 46,913 tons iron—value, 10,729,841 fr. The average price per ton in the whole kingdom was—1843, cast-iron, 93 fr.; iron, 206 fr.; 1844, cast-iron, 87 fr.; iron, 229 fr.

Comparing 1844 with 1839, we find that the number of mineralurgic establishments increased by 59, principally for treating iron. The production of cast-iron and iron underwent a considerable reduction. In 1838, the number of furnaces in activity was 89, and in 1844 only 49; of *affineries*, in 1838, the number was 211—in 1844, only 113. The diminution was principally in the furnaces fed by charcoal. Of 79 in activity in 1838, there were only 26 in 1844; but the number of furnaces in which coke was used rose from 20 to 23.

## RENT OF MINES.



Mining Correspondence.

ENGLISH MINES.

**BARRISTOWN.**—The main lode, in the 18 fm. level end west, has increased in size; it is now about 3 ft. wide, and worth about 101 per fm.; the winze behind this end, sinking on perpendicular part of lode, is worth about 101 per fm.; the rise in the back of the same level, to the 12 fm. level, is worth 161 per fm. In the 12 fm. level end, middle lode, the lode is at present cut off by a slide in the end, but the slopes in the bottom of this level have very much improved—worth about 161 to 181 per fm. The pitches, on the whole, look a shade better.—August 28.

**BEDFORD UNITED.**—At Wheel Marquis, the lode in the bottom level, east of the pump winze, is 3 ft. wide, and worth 501 per fm.; in this level west, the lode is divided by a horse of killas, being in the south part 2 ft. wide, and worth 401 per fm., and the north part 18 in. wide, and worth 101 per fm. There has been no lode taken down in the 60 fm. level east since last report; the lode in the pitch in the back of this level is still worth 401 per fm.; the lode in the western winze, in this level, is 12 in. wide, composed of spar, mundie, and ore. In the 70 fm. level east, the lode is 2 ft. wide, and worth about 101 per fm. The lode in the 58 fm. level is still poor. At Liscombe, there has been no lode taken in the adit level, or rise in this level, in the past week. The lode in the level driving east of the south engine-shaft, is 18 in. wide, producing good stones of ore; in the adit level east, the lode is 18 in. wide, composed of spar, mundie, and ore. We sampled on Friday last July ore, computed 110 tons (21 cwts.).—August 31.

**COATLITHE HILLS.**—The level east from A shaft, has been driven about 4 ft. during this week; the vein in the end has been very much disordered during the last two or three days, and does not look so well as it did when I last wrote; but I hope it will soon resume its usual appearance. The ground in the horse level is much the same as when I last wrote; and that level has been driven nearly 1 fm. during this week.—August 28.

**CUBERT SILVER-LEAD.**—There is no alteration in the ground in the engine-shaft: we have sunk below the 35 fm. level 3 fms. 5 ft. The lode going east, in the 35 fm. level, is at present 18 in. wide—rather a hard spar, with a good deal of mundie, and rich stones of lead ore; in this level, going west, the lode is 2 ft. 6 in. wide, although just now of a hard nature; we consider it a very promising level, worth at this time about 31 or 41 per fm. In the 25 fm. level east, the lode is small, but kindly, and yielding some lead—leaving ground which will set at a moderate tribute; the same level, going west, has a very promising appearance, the lode being 1 ft. wide, composed of soft spar and lead. In the 15 fm. level cross-cut, there is about 10 ft. more to drive south, to get under the new shaft, which will be completed in a short time. To-day we have held the public setting for September, particulars of which you have forwarded us by this post.

**DEVON AND COURTENAY CONSOLS.**—In the end driving east, in the 30 fm. level, the men have driven through the slide, and discovered the lode the other side; the lode appears to be divided into branches, composed of soft spar, mundie, and killas; in the end, driving south on the cross-course, in this level, there has not been much progress made this week by driving; the men have been obliged to put in timber to secure the ground they had driven through last week; the lode in the deep adit level is without much alteration since my last report; in the shallow adit level, on the north lode, the lode is from 20 in. to 2 ft. wide, composed of mundie, can, and spots of lead ore; this level is now driven to within a few feet of the bottom of the flat-rod shaft, with which a communication will shortly be effected; in the engine-shaft the ground is at present rather hard—the killas being mixed with layers of spar.—Aug. 31.

**DEAN PRIOR AND BUCKFASTLEIGH.**—Saturday last being our usual monthly setting day, I beg leave to hand you a short detail as to the prospects and proceedings of the mine. In the deep adit level, driving west, the lode is improving—about 18 in. big, composed of capel and iron; price for driving, 31. 5s. per fm., by four men. In the 10 fm. level the lode in the end is of a very promising character, composed chiefly of spar—price for driving, 31. 5s. per fm., by four men. In the 20, or bottom level, the lode is about 18 in. big, composed of capel, prian, and spar, with a small string of flookan. The lode is of the most promising character, although at present unproductive; but, from the present indications, I am of opinion, by extending the level a little further west, the lode will again be productive for ore—price for driving, 31. 10s. per fm., by six men—although I shall have to take out some of the men from the different levels for seven or eight days, in order to assist the clearing out, or excavating, the ground for the new wheel pits with all possible dispatch. The rack price for sinking the wheel pits is 8s. per solid fathom, by 10 men. We have racks also in bringing up the lobby—price per fm., 5s. 9d., by four men. I expect to complete the excavations of the wheel pit in the course of seven or eight days—so that the masons will commence building the walls immediately after the ground is cleared out. The tributaries, in the back of the 10 fm. level, refused their pitch on Saturday last. I shall be able to state, in the course of two or three days, as to the quantity of ore raised, and brought to surface, by the tributaries in the past month.—Aug. 30.

**DRAKE WALLS.**—No alterations worth notice as to the prospects in the western part of the mine. We calculate on sampling 17 tons of tin on the 12th September, if possible; but the dry weather is against dressing the quantity we otherwise might have. We are sinking on the Wheel Russel copper lode; this lode is from 20 in. to 2 ft. wide, well defined, impregnated with copper and mundie, in a gossan of great promise—south underlay, 8 ft. in 6. We are also making preparations for the new engine as fast as possible, taking out foundation, &c.—August 30.

**EAST ALVENNEY.**—We shall return from this mine a small sample of crop tin in a few days, worth 501 per ton. We have a great pile of tin broken, but this must be dressed by stamps, and ours are not yet completed. The middle lode is a very kindly one, and we are breaking most excellent stones of tin in all the three lodes, as also in sinking under the adit.

**EAST CROWDALE.**—In the past week we have sunk through the lode in our engine-shaft, and I am glad to state, that the appearance of it has continued to improve; we have a firm lode, 2 ft. wide—good saving work. The ground in our engine-shaft is very hard indeed, the killas being intermixed with a hard sharp spar. I am happy to state, that the north lode, cut in the Box Hill adit level, still continues very good, and has every appearance of a lasting course of tin; we are carrying about 4 ft. of the lode, which is all capital saving work. It is with great pleasure I state, that the prospects of this mine are, in every sense of the word, exceedingly encouraging; in fact, a short time will put you in a position to make plentiful and dividend-paying returns. I confidently say this much—the appearance will decidedly bear me out, and the sooner a set of stamps is erected, the sooner these opinions will be fulfilled. Our engine and pit work in good order.—August 28.

**EAST TAMAR CONSOLS.**—Harrison's shaft is sunk 17 ft. 6 in. under the 54 fm. level; the lode therein is 2 ft. wide—flour-spar and ore, a very kindly lode. The lode in the 54 fm. level north is 20 in. wide—saving work; the lode in the same level south is 2 ft. wide—flour-spar and silver-lead ore. The lode in the 46 north is 18 in. wide—work of a good quality; the lode in the same level south is in disordered ground. The lode in the 30 fm. level south is 20 in. wide, with capel, spar, and ore—saving work. Charlotte's is just the same—no important alteration.—August 31.

**ELBOROUGH.**—Since my last, we have for the last month sunk Vivian's shaft 3 fms. 5 ft., the lode in which has been about 3 ft. wide, composed of flookan, spar, and occasionally producing lead, calamine, and barytes. A lode from the south has just intersected us, and we hope it will improve our land in depth, which it has every appearance of doing. We have commenced sinking Chapman's shaft on the course of the lode, which is 2 ft. wide, composed of spar, carbonate of lime, barytes, calamine, and good stones of lead.—Aug. 30.

**GREAT WHEEL MARTHA.**—In the 40 fm. level, going east, the lode continues just the same size (5 ft. big), 18 in. being composed of copper and mundie—saving work—a box of which I send you by this post; the remaining 3 ft. contains spar and capel, spotted with ore. We have met with several cross veins, composed of soft spar, containing spots of beautiful yellow ore; these are favourable indications. The end in the last 6 ft. is much improved. We have put some men to open on the great gossan lode, north of the present workings (a stone of gossan I also send in the same box), and I hope to give you more particulars of this in my next report.—August 28.

**GUNNIS LAKE.**—At Chilsworthy, the lode in the 25 fm. level, west of Bailey's engine-shaft, is 2 ft. wide, composed of spar, prian, and mundie, with a little ore in places; in this level east, there has been no lode taken down. We are still driving north in the 12 fm. level west.—August 31.

**HAWKMOOR.**—The lode in the 15 fm. level, east of Hitchen's shaft, is about 2 ft. wide—capel, spar, mundie, and spots of ore.—August 21.

**HEIGSTON DOWN CONSOLS.**—The lode in Bailey's engine-shaft is 3 ft. wide, composed of gossan, spar, and tin—saving work, and ground favourable. In the 20 fm. level east, the lode is 9 ft. wide; and in this level west, the lode is 2 ft. wide, composed of gossan, spar, and tin—saving work. The ground in Buddie's adit north is favourable.—August 31.

**HOLMBUSH.**—The ground in the diagonal shaft sinking below the 120 fm level is still favourable. The lode in the 120 fm. level, west of the great cross-course, is 16 in. wide, composed of spar, mundie, and stones of ore. The lode in the 110 fm. level south is 10 in. wide, composed of soft spar, and prian, spotted throughout with lead—a very promising lode indeed, and one that is likely to prove productive. The lode in the rise above this level is 2 ft. wide, composed of spar, and stones of lead (good work for the stamps). The lode in the 100 fm. level south is 20 in. wide, composed of soft spar, prian, and lead; worth 201 per fm.; the tribute pitch, in the back of this level, is as productive as ever it was. The lode in the 90 fm. level south is 301 in. wide, composed of spar, flookan, and stones, and spots of lead—all of which is saved for the stamp. At present, we have two stamps at work—viz.: a 30 and an 18-ft. diameter

wheel; and we have another 18-ft. wheel, 24-ft. breast, with a new crusher attached to it of 15-in. rolls, which we purchased for 281. 5s. We intend fixing four heads on the opposite side of the crusher, to work alternately, the crusher by day and the stamps by night; "below this wheel" there is fall enough to erect another wheel, of 24-ft. diameter, should we, at any future time, require it. We sampled, on Friday last, computed 15 tons of silver-lead ore; samples of the same have been sent to all the companies who purchase that article, to be tendered for at the company's office, on or before the 7th day of September next. Perhaps it may not be amiss to state the distance we have from our present levels on the lead lode (south to boundary), which is as follows:—from the 90, 123 fms.; from the 100, 111 fms.; from the 110, 159 fms.; and from the point where we shall intersect it at the 120, we shall have above 200 fms.—the latter distance will also apply to any deeper levels we may have going south.—Aug. 31.

**ILAM.**—August 28.—This being our taking day, I beg to hand you the prices of the bargains. The cross-cut driving towards Brown's shaft—price for driving, 61. 10s. per fm. The lode in Robins's shaft has a very promising appearance; we have flookan on the back of the lode, and there is a saddle of ground in the shaft; price for sinking, 71. 5s. In the 67 fm. level east the lode is large; and I expect we have 4 fms. more to drive to cut the lead lode in the cavern—price for driving, 61. 5s.—September 1.—Since I wrote you last, I have set another end to drive in the 67 fm. level west of Robins's shaft, on the same lode as we were driving towards Brown's shaft; this end is driving to the north of Robins's lode, in order to cut the perpendicular lode, and to get back under the shoot of ore gone down in the bottom of the 40 fm. level, west of Robins's shaft. I consider we have to drive about 8 or 10 fathoms to cut the perpendicular lode, set at 51. 5s. per fathom for 10 fathoms, or to cut the lode—by which, it will be observed, the price is reduced. The other parts of the mine are looking just the same as when I wrote you last. I have been this last day or two looking over the Ilam sett, and have discovered 3 other lodes—2 containing copper and lead. I broke some very fine stones of the carbonate of copper on the back of one of the lodes, which is near the River Dove.

**JAMAICA MINE.**—Ladies and Gentlemen: I address my report to the ladies, understanding that the majority are of this class. I have examined thoroughly your mine, where I find what has been called pipes, or flats, of ore are most decidedly on a vein running from 30 to 40° north of east, underlaying southward, on an angle from 30 to 40°, in a stratum of grit, laying on the limestone of this mineral district. The grit at this place may be estimated at from 50 to 70 fms. deep; the deepest workings made in it are from 40 to 60 fms. Your present rich bunch of ore, yielding 10 tons per fm., is in the back of the 40 fm. level, from which I should think that 10 men could raise 100 tons of ore per month. The shaft is near to this great course of ore, and is convenient for working, but the workings must be kept full with rubbish to within 6 ft. of the stopes, to secure the ground, which is done by drawing up the stuff from the 40 fm. level, otherwise the same number of men might raise double the quantity before named. This branch of ore being at the eastern extremity of the workings, I should recommend the 40 fm. level being continued east, with all convenient speed, where your chances of finding other runs of ore are great; but I look for the riches of this mine where the vein must, I think, at no great depth form a junction with the limestone; even if the vein should not penetrate the limestone, very rich flats of ore may be looked forward to with confidence; but I have no reason to think that a vein will not be found in the limestone; on the contrary, I think the vein in the grit has originated from a vein in the limestone, the grit being secondary to it. There is evidently a piece of ore ground about 20 fms. east from the ladder-road, or Taylor's shaft, and 30 fms. west from your rich course of ore, on which I should recommend the sinking under the 40 fm. level, and finding the junction of the lode with the limestone, where I have great faith in your finding it rich. I must say, that in my experience, I have seen nothing like such a course of ore in a vein in the grit rock, and must again call your attention to the deepening the workings, so as to prove the junction of the vein with the limestone. The ground in this mine is drained 70 or 80 fms. below surface from natural causes, to the depth of the bed of the river Alan, by cross-courses in the limestone, running obliquely to it; and any moderate quantity of water falling on the grit, passes through it at once into the cross-courses in the limestone below.—Mold, August 28.

**KIRKCUDBRIGHTSHIRE.**—Having gone through our setting for the next month (September), I beg to hand you statement of prices and prospects. Stewart's shaft is 6 fms. 2 ft. under the 40 fm. level—the lode small and poor. The lode in the 40 fm. level west is 6 ft. wide, and no north wall, producing about 1½ ton of lead per fm.—set to six men, at 31. 5s. per fm.; four other men are engaged to strip down this lode, behind the end, with a view to ascertain the north wall. The lode in the 30 end west is 4½ ft. wide, but poor—set to six men, at 51. 10s. per fm. The 20 fm. end, driving west, is also poor—lode about 2½ ft. wide, set to six men, at 41. per fm.; the stopes in the back of this level are set to six men, at 21. 5s. per fm. (in two bargains). The winze sinking under the 30 fm. level is poor—refused at 61. per fm.; four men are engaged cutting a plat in this level, with a view to stop some lead ground near the shaft, in the bottom of the level, as this run of lead has not been seen in the back of the 40 fm. level. Driving west from the winze, east of shaft, the lode in pretty good, producing three-fourths of a ton per fm.—set to six men, at 31. per fm.; we expect soon to hole to shaft here, after which we shall stop the intermediate ground. In the new shaft west, the water has become so quick, that we cannot set it at any price; it must, therefore, remain until we get the 20 ft. wheel at work, or a greater force of men. We have set a rise in the back of the 30 fm. level, near the end west (to communicate with the 20), to four men, at 31. 10s. per fm.—August 28.

**LEWIS.**—The prospects in the 60 east are still very cheering; in the 60, west of pump-shaft, we have commenced to drive south from Caple's winze, in order to cut the south branch. The lode in the 50 east is much the same as when last reported; the lode in the 50 east, on the south branch, is 1 ft. wide, and worth 111 per fm. for tin, and is very promising; if we can be so fortunate as to intersect this lode in the 60 so productive as it is in the 50, our prospects will be still more cheering. The lode in the 40 east, since the last report, is very much improved—3 ft. wide, worth 41. per fm.; in the 40 cross-cut south from copper-ore shaft, we have cut a branch, producing some good work for tin; we do intend to continue south, until we intersect middle lode. The lode in the 20 east is 3 ft. wide—worth 51. per fm. for tin, and very kindly. The lode in Praed's shaft is 18 in. wide, producing some tin, and very promising; the above shaft is now holed in the 20 fm. level, but find it was sunk on a lode to the north of that in the present end about 7 ft. Eady's lode, in the 10 fm. level end east, is 1 ft. wide—worth 61. per fm. for tin. I think I never reported with so much satisfaction as at the present, for certainly our prospects were never so encouraging as they now appear.—August 28.

**MENDIP HILLS.**—The lode in the 38 fm. level, south of Stainaby's shaft, continues about 2 ft. 6 in. wide, composed of spar, limestone, and a little flookan intermixed with particles of lead—ground more favourable for driving than it has been; in the winze sinking below this level, we are down 11 fms. 2 ft. 8 in., at which part the lode is 3 ft. wide, composed of flookan, quartz, iron, and small spots of lead at times. We continue to progress favourably with our operations in the slag department. During the past week, we have been engaged levelling and preparing the ground for the tram-roads, making carriage-roads towards the proposed site for smelting, &c.; also in removing top rubbish from off the beds of slag, which is being done as fast as possible.—August 30.

**NORTH WHEEL FRIENDSHIP.**—We are breaking excellent stones of tin, in driving towards the river, to unwater the end of our level. I never saw so large and good a pile of tin from so young a mine. We shall immediately be sinking to cut the lode in deeper levels, where there can be no doubt of abundance of tin.

**SOUTH FRIENDSHIP WHEEL ANN.**—The lode in the 32 fm. level is looking well; it is 4 ft. wide, underlaying about 2 ft. in the fm., and composed of very large stones of mundie, felpar, stones of lead, carbonate of lime, quartz, blue peach, and spots of copper—a very kindly lode indeed.

**SOUTH TAMAR UNITED.**—The water is in fork under the 70 fm. level, and we dropped our lift yesterday 2 fms.—we could not drop any further, on account of the old timber being across the shaft. I hope by the latter part of this week, we shall fork the water to the bottom of the perpendicular part of the shaft. The adit level is clearing and securing very satisfactorily.—Aug. 31.

**SOUTH WHEEL MARTHA.**—There has been 2 fms. driven in the cross-cut, north from the engine-shaft, in the 20 fm. level, in the last fortnight, and the ground continues with little or no alteration. There are 3 fms. driven west on the course of the lode, south of the engine-shaft, in the 20 fm. level, and the lode is from 18 in. to 2 ft. big, composed of mundie, spar, &c.; with some good yellow ore in the capel. Although the quantity of water in the River Tamar just now is much less than has been known for several years past, there is a sufficient quantity to keep the mine clear of water.—September 2.

**SOUTH WHEEL TRELAWEY.**—The engine-shaft is sunk 7 fms. 4 ft. below the adit level, the ground in which is still favourable in every part of the shaft, and the water less than one stroke per minute. We have this day set the men to sink 10 fms. certain, at 141. per fm., and to divide and ease down the shaft for the same; and, in order to expedite the sinking, they are to commence working early Monday morning until Saturday night late. I may likewise observe, our engine continues to work remarkably steady, and is well put together.—August 28.

**TAMAR SILVER-LEAD.**—In the 100 end, south of the shaft, the lode is 3 ft. wide, saving work; in the same level north the lode is 18 in. wide, good saving work. In the 145 end south the lode is 1 ft. wide, producing good stones of ore; in the same level north the lode is small and poor; in the winze, sinking in the bottom of this level, the lode is 18 in. wide, very good work. In the 185 end the lode is 1 ft. wide—still carrying a rich leader of ore, 6 in. wide. In the 195 end the lode is 3 ft. wide, of a coarse quality. At North Tamar, in cross-cutting west in the 70 fm. level, we have discovered another branch on the main part of the lode, about 18 in. wide, composed of flookan and capel,

with some very rich ore. In the 60 and the lode is 2 ft. wide, composed of mundie, flour-spar, and ore, saving work. The tributaries here are working with spirit. The north mine, on the whole, is improving. We hope to sample, on the 3d of September, about 80 tons of rich silver-lead ore.—Aug. 30.

**TAVY CONSOLS.**—The prospects of the mine are still very flattering since our last meeting; we have had some good bunches of ore in the bottom level, and at present the south part of the lode, for about a foot wide, is saving work; the lode is still large, upwards of 7 ft. wide, and not containing so much mundie as before—driving at 81. per fm.; the lode in the shaft is much the same as before—still large, upwards of 7 ft. wide, composed of mundie, spar, and stones of ore—sinking at 201. per fm. In the 12 fm. level, west of cross-course, the lode is about 6 ft. wide; and to the south, for about a foot wide, have a leader of mundie and ore; the remainder part is generally composed of spar—driving at 61. 10s. per fm.; the north lode east is about a foot wide, saving work—driving at 81. 15s. per fm.; the western pitch, in the back of the 12 fm. level, is still looking very well—working at 7s. in the 12; the eastern one, for the present, is poor. We have about 40 tons of ore, dressed and undressed, now on the floors. Our grinder works very well, which will affect very considerable saving in the dressing department. I hope to get our drawing machine to work in seven or eight days. The rest of our surface work is in a progressive state. We shall sample, for the next two months, upwards of 60 tons of copper ore; the pitch, in the bottom of the shallow adit, west of cross-course, is looking very well—working at 4s. in the 17.—Aug. 31.

**TINCROFT.**—The lode in the 100 fm. level, east of the new engine-shaft continues about 4 ft. wide, ore throughout; in the 100 west the lode is 2½ ft. wide, worth 81. per fm. The lode in the 90 east continues large, with occasional stones of ore; the 90 west, on north lode, is worth 151. per fm. for ore; the 90 east, on small lode, is unproductive; but we are daily expecting an improvement, as we have a good lode in a winze, sinking on tribute, from the level above, beyond the end. The lode in the 80 east is 2 ft. wide, producing saving work for tin; the 80 west is worth 81. per fm. for copper ore. The 70 east is producing tinstuff of coarse quality. The 60 west is producing some ore, and kindly. At Palmer's shaft, in the 80 fm. level, we have now cut the south wall of the north part of East Pool lode. I hope, in a few days, we shall have cut through it, and let down the water from the winze, 5 fms. to the west of the shaft, in the bottom of the 70, where we have a pretty good lode for copper ore. The lode in the 70 west is 3 ft. wide, worth 121. per fm.; the lode in the winze, sinking below the 60, is worth 121. per fm. The 48 west is at present unproductive. The tribute department, on the whole, continues to look well. On Chappel's lode, the ends in the 100 and 90 are poor for copper ore; but producing some tinstuff; the pitches, in the back and bottom of the 100, and back of 90, continue to look well. On Highbury lode, the 152 east is unproductive; the same level west is producing some tin; but the ground is very hard; the same may be said of the stopes below the level. The 142 east has been a productive level for many fathoms, and continues to produce fair quality tinstuff, as does also the rise in the back of the level; the winze, likewise, coming down on it, is yielding good work for tin. The 120 end is worth 151. per fm. The stopes in the bottom of the 100 is worth 201. per fm. The stopes in the back of the 110 is worth 61. per fm. We set Wheel Providence engine to work last week, and have drained the water 9 fms. below the adit; we have got to secure the shaft before we can go deeper.—Aug. 30.

**TRELEIGH CONSOLS.**—Sinking Christo's shaft below the 110; we shall commence with cutting a plat and putting in pent-house, which will require about three weeks. In the 110 fm. level, east of ditto, lode 2 ft. wide, more promising, with occasional stones of ore; the 110, west of ditto (new), will be driven on the cross-course in search of the lode. In the 100, east of Garden's shaft, lode 8 ft. wide, with some ore and mundie—looking kindly to improve; in the 100, west of ditto, lode 2½ ft. wide, intermixed with killas—but little mineral. In the rise, above the 90 west, 2 ft. 6 in. of the measurement has been driven on the 90 west; the lode in the rise is 18 in. wide, with good stones of ore—not to value. In the 80, west of ditto, 1 fm. 4 ft. of the measurement has been sunk in the winze below the 80; the lode in the 80 west is 20 in. wide, worth 121. per fm., with a very promising appearance; in the 80, east of ditto, lode 20 in. wide, producing good stones of ore, not to value. In the 70, west of ditto, lode 20 in. wide, and has a kindly appearance, with occasional stones of ore. The winze, below the 60 west (new), is driven 3 fms. 1 ft. 6 in. in the 60 west; lode, to commence with in the winze, 3½ ft. wide, of a very kindly nature, with stones of ore—this will be sunk 10 fms. before the 70 end. In the adit east, on Wheel Parent lode, lode 2½ ft. wide, of a very promising appearance, with stones of ore. In the new shaft from surface, on Wheel Parent—this shaft is intended to take the lode 30 fms. below the adit. The rise, above the 110, east of Christo's, is holed—measured 6 fms. 4 ft. 6 in., will be set on tribute next week. In Garden's shaft, men have been cutting plat in the 100 fm. level this month, and driving north; cross-cut suspended.

**UNITED HILLS.**—In the 90 fm. level, back slope, the lode is 2 ft. wide—worth 181. per fm.; nothing done in the bottom of this level for the past week. At Wheel Sparrow, in the 40 fm. level there has been nothing done in this end during the past week. In the 30 fm. level the lode is 2 ft. wide—worth 41. per fm.—August 31.

**WEST WHEEL JEWEL.**—In the rise, in the back of the 70 fm. level, west of Hodges's cross-cut, on Wheel Jewel lode, lode 1 ft. wide, worth 61. per fm. In the 30 fm. level, west of Quarry shaft, on Tolcarne tin lode, lode 1 ft. wide, worth 61. per fm. In the 12 fm. level, west of Quarry shaft, on same lode, lode 1 ft. wide, worth 81. per fm. In the adit end, west of Quarry shaft, on same lode, lode 18 in. wide, worth 101. per fm.; in the shallow adit end, west of Quarry shaft, on same lode, lode 1 ft. wide, worth 61. per fm. In the stopes, in the bottom of the adit, east of Fryor's winze, on the same lode, lode 2½ ft. wide, worth 251. per fm.—August 30.

**WEST WHEEL MARIA.**—The lode in the 38 fm. level, west of the eastern engine-shaft, is 3 ft. wide, producing good stones of ore; in this level we intend cutting plat, and prepare for sinking with all possible dispatch; the lode in the western engine-shaft is about 8 ft. wide, with a little ore in places. In the 54 fm. level, east of this shaft, the lode is 18 in. wide, without important alteration; the cross-cut south, in this level, is much the same for driving as last week, rather hard.—Aug. 31.

**WHEEL ADAMS.**—The western silver-lead lode in the rise, in the 30 fm. level, is split into two branches—the eastern part consists of friable quartz and granular galena; and that of the western, mostly of blende; the whole is worth 51. per fm.; the outer rise has reached the deposit of blende, at which point the middle branches have evidently formed a junction with the eastern lode, where it is at least 7 ft. wide, containing, in addition to the jack, good stones of lead. We have commenced raising jack to-day, and shall continue to do so, for the double purpose of obtaining any other part. The eastern lode, in the 40 winze, continues large and ore throughout—the ground is, however, wet, and at present rather troublesome for sinking; but it contains a little lead of good quality. The lode in the 28 fm. level south has not yet been taken down; the lode in this level, on the eastern lode, is 2 ft. wide; and from the bottom of the lode in this level, on the eastern lode, is 2 ft. wide; the lode in the end, 3 ft. up, it contains good stones of lead, but the back is poor; the north end is 2½ ft. wide, consisting of friable quartz, spotted with lead; it is improved in appearance, but owing to fixing of timber to secure the ground, much has not been done in the way of driving during the past week. The stopes in the 18 fm. level are not so good as they were last week—a large mass of a softish barytes have divided the lode, but this will not continue many feet—a softish disintegrated iron pyrites having made its appearance on the hanging wall, which will invariably destroy the effects of the former.—Aug. 31.

**WHEEL BLENCOWE.**—In driving our north end, in the 8 fm. level, on the course of the north and south lode, we have recently cut the east and west lode, which was discovered by the old men near the surface; it will average about 6 in. wide, fair work; the ground around it is very fair; the men are now working it at 15s. per fm., and are getting good wages; in the 10 fm. level we have, since last reported, hauled the ground between the old shaft and the new one; we can now work it to the best advantage, having plenty of air; men are now employed here in breaking down the lode, which is turning out very well—four men can break a sufficient quantity of work to supply a six-head stamps, worth about 4 cwts. of tin per 100 sacks. The other parts of the mine are looking just as usual. We have now on the mine 4 tons 13 cwts. 2 qrs. of tin ready for the market, which we shall return in the course of a day or two.—August 31.

**WHEEL CURTIS.**—I am happy to inform you, that our engine and flat-rod are working well; also, that we have had good success in forking out the water, and cutting down the shaft; the water is now 6 fms. below adit, and the shaft is cut down and secured 5 fms. below adit; we shall drop again on Saturday morning. We have sunk a pit parallel to Crase's flat-rod shaft, on the Charlotte lode; the pit is 15 ft. deep from surface; the lode is nearly 8 ft. wide, composed of very rich gossan—a finer-looking lode at this depth I never saw, and believe at a greater depth will prove rich for copper; we intend sinking a shaft here immediately to open on this lode.—August 26.

**WHEEL MARY ANN.**—The lode in the 30 fm. level, south of Barratt's shaft, is small, being disordered by a small cross-course; it was precisely the same in the level above. We are daily expecting an improvement, as there is a splendid lode gone down in the bottom of the 15 fm. level, before this end. The driving of the 15 fm. level on the lode, is suspended, until the cross-cut, which the men are now driving in that level is holed to the engine-shaft, when it will be again resumed, there not being sufficient air for two pairs of men; the above cross-cut will take above a month to hole. The stopes are looking well. Pollard's shaft is sunk 10½ fms. under the adit level.—Aug. 30.

**LYDPORT CONSOLS.**—The lower part of the lode is 20 in. wide, good work for lead—the lode is composed of lead, prian, quartz, and mundie; and there is not a more promising lode in the two counties.



## FOREIGN MINES.

**NATIONAL BRITISH MINES.**—*Chas. J. Jones, Esq., in the chair.*—From a store of ground on the eastern end, there has been a good sample taken, which is a capital sign, more especially as the line of the old workings, judging from their position above, must now be near hand. It is impossible to ascertain at present, with any degree of accuracy, the direction or the point at which the veins near the Caraco shaft must have terminated, or entered into the hard rocks. The stopes are all crushed together, and the shaft filled with stuff, which will be cleared out as early as possible.

Produce: 23d June, 11 mks. 4 ozs. 7 dls. 4 grs.; 3d July, 8 mks. 0 ozs. 3 dls. 7 grs.—19 mks. 5 ozs. 2 dls. 48 grs.

*October, Nov. 7.*—It is with confidence I boldly assert, that the prospects of this mine have never been so cheering since I have been a servant of the association, as at the present moment; nor do I think it likely that the obtaining of a good return will entail upon itself any great addition to our average monthly expenditure.

Produce: 7th June, 6 mks. 2 ozs. 6 dls. 30 grs.; 17th June, 3 mks. 4 ozs. 5 dls. 27 grs.—9 mks. 7 ozs. 3 dls. 47 grs.

Total produce of the mines for 18 days, 39 mks. 8 ozs. 2 dls. 23 grs.

## ASTURIAN MINING COMPANY.

An adjourned general meeting of shareholders was held, on Monday last, the 30th August, at the company's offices, Austin-friars.

*S. P. PRAET, Esq., (chairman of the board of directors), in the chair.*

Messrs. Cunningham, Kull, Scale, and Skrine, members of the direction, were present, and a considerable number of shareholders.

It appeared, from the report of the directors, that Mr. Levi, an engineer, had been despatched, at the personal expense of a number of shareholders, to inspect the company's property and works in Spain, with the view of reporting to them his opinion as to the state of the undertaking, and the prospects for the future; that he had submitted his report, and that a copy of it had been forwarded to the directors to be submitted to the shareholders, but not to be distributed till permission had been given by the parties at whose expense the document had been procured.

The report was exceedingly minute, and extended to great length. It described the company's property, the present state of the works, the difficulties which had been encountered, and had still to be overcome; the present yield of the collieries and quicksilver mines; the leading features of the several mines comprised in the property; specified the value of the present yield of coal, iron, and quicksilver, and estimated the probable result in coal, iron, and quicksilver, when the works now in progress should be completed. The report, as a whole, was exceedingly satisfactory and encouraging, bearing testimony to the exertions of the directors and their servants, and expressing a confident belief in the productiveness of the enterprise. Mr. Levi estimated the profit from the present operations to the 31st of December, at £12,420; for 1848, when the works are completed, at £75,462; and at £158,107, should additional appliances be brought into play.

In referring to this report, the directors stated that it held out a prospect that the most sanguine expectations which were ever entertained of the results of the enterprise would be more than realised. After describing the difficulties with which they had had to contend, arising in part from the hard winter, the want of roads, the difficulty of raising money, and other causes, the directors went on to say, "They can now, however, with some certainty, fix a period when the works will be in productive action. Indeed, this has for some time been the case with the mercury furnaces, and the Santo Firmé collieries. The former has been yielding for some weeks a valuable produce, constantly upon the increase, and which has enabled the manager to deposit in the Government stores at Madrid, up to the 9th August, 8200 lbs. of quicksilver, worth about £200; and they fully expect that more than this sum will be monthly produced. The mill, and other works, are in a considerable state of forwardness; the greatest part of the machinery being either fixed or on the spot. The directors are happy to inform the shareholders, that through the exertions of Mr. Colquhoun, at Madrid, arrangements have been made for funds by monthly payments, on account of the quicksilver delivered; and the sum of £1200, has already been placed at the disposal of our agent from this source, thus relieving the shareholders from a considerable part of the future expense." The directors add, that having been so frequently disappointed as to a dividend, they are reluctant to fix a particular period for declaring one; but their hope is, that by the end of the year, the produce of the quicksilver, the coal, and the iron, will be such as to enable them to pay a dividend. At that time there would be a considerable sum to be appropriated, but it would be matter for consideration, whether it should be applied to defray the current expenses, or put aside for the purpose of a dividend, in which case some other means would have to be adopted for raising the funds necessary to complete the works, such as by further calls, or by the disposal of the unappropriated shares.

In reference to the 8000 unappropriated shares, the directors throw out a suggestion for the consideration of the proprietors at the next meeting, which will take place in October, to this effect, that each shareholder shall have the option of taking up these shares to the number of 25 per cent. of the shares he now holds, at 8s. each, payable in monthly instalments of 1s.; and that when the 8s. is paid, the scrip shall be converted into shares, upon which 11s. has been deemed to be paid. At the same meeting the propriety of fixing a dividend will be considered.

In connection with this suggestion, the CHAIRMAN remarked that it had been thrown out at the request of a considerable number of shareholders, who were extremely anxious that a further call on the present shares should be avoided. Should the shareholders approve of the arrangement, the sum to be raised by monthly instalments would go a good way to defray the expense of the works now in progress. In Mr. Levi's report reference was made to the construction of a railway, as a means of economising expense.

A SHAREHOLDER inquired what the expense of this might be?

The CHAIRMAN said, that the question of the railway was not involved in realising the estimates put forth by Mr. Levi; and he would not recommend that the expense (probably about 50,000*l.*) should be incurred till the company was paying a handsome dividend.

A SHAREHOLDER asked if it was not understood that Colonel Biré, in the event of Mr. Levi's report being favourable, would take the unappropriated shares at par?—The CHAIRMAN said, that such was the understanding; but no communication had been received from the colonel, who was now in Madrid, on the subject. Should the offer be made, it will be submitted to the shareholders before being accepted.

Mr. WILKINSON thought that the interests of the company would be promoted were a change to take place to some extent in the direction. He thought that means should be taken to secure the retirement of Colonel Stopford and Colonel Fitch.—The CHAIRMAN said that this was a difficult matter. The directors felt very strongly the force of the objections stated by the hon. proprietor, but, according to the Deed of Settlement, it was difficult to displace a director. It should also be borne in mind, that the two gentlemen named had been of much use to the company, and were still anxious and willing to continue to be of use. They were both in Madrid, and did not receive any allowance as directors.

After glancing at the accounts, a SHAREHOLDER expressed the opinion that the directors had exceeded their power in disposing in the market of a number of shares, and that a considerable loss had been sustained by the company in consequence. This led to some acrimonious remarks; but the matter was satisfactorily cleared up, and the *amende honorable* made. The shares disposed of were forfeited shares, and so far from there being a loss, the sales had left a profit to the company. The official report of the directors was unanimously approved of; and as to their suggestion relative to the distribution of the unappropriated shares the feeling of the meeting seemed to be that it would be better to raise funds by an additional call, so encouraging were the prospects of the company. This point, however, will be discussed at the October meeting. Should the shareholders resolve to divide the £12,400*l.* expected to be available by the end of the year, from six months' working of the mines, it will be equal to 10 per cent. on the capital.

## GREAT WHEAL MARTHA MINING COMPANY.

A special general meeting of shareholders was held at the offices, Winchester-house, on Thursday, the 2d inst.

*J. BRIGHTMAN, Esq., in the chair.*

Mr. COLE (the secretary) having read the notice convening the meeting, proceeded to read the report of the directors, which entered very fully into the present position of the mine, by which it appeared that the balance of liabilities over the arrears of calls on the old and preferential shares (considered good), amounted to about 300*l.*; that a considerable number of preferential shares were unappropriated;—but that, if all were taken up, they would not provide a sufficiency of funds for the operations recommended; and that Mr. P. N. Johnson, Capt. Seccombe (of Marko Valley), Capt. Phillips (of the Callington Mines), Capt. Prince, Capt. Paul, and other respectable mining captains, had recently inspected the mines, and uniformly expressed a favourable opinion of the mine at a greater depth, and to effect which would require an outlay of 3600*l.* The directors suggested the formation of a new company, on the Cost Book System, to consist of 2000 shares of the value of 5*l.* each, payable by instalments of 10*s.*, and to be offered in the first instance to the shareholders in the old company. The proposed company to be called the New Great Wheal Martha Mine; and that the old company should lease the sett, buildings, and materials to the new company, for a term of three years, at a yearly rent of 400*l.*, with a permission for them to purchase the same at any time during the said period for 3000*l.*, or to return the sett, and all machinery, to the old company, should they stop working the same within the said three years—the rental to cease upon such return of the sett, &c., or purchase.

Considerable discussion then ensued, and it was generally considered that to force a sale of the materials at the present time would be most detrimental to the proprietors, and that the proposal for a new company was a very desirable plan to carry into effect.—The report was then unanimously adopted, and a resolution passed to convene a special general meeting of the shareholders for Wednesday, the 22d inst., to take into consideration the proposal of the directors for the formation of the new company; and that the intentions of the old proprietors generally, as to embarking in the new undertaking, be previously ascertained.—A vote of thanks having been passed to the chairman, the meeting separated.

## COMBARTON AND NORTH DEVON LEAD AND SILVER MINES.

At the annual general meeting of shareholders, held at the counting-house, on the 18th August. *J. G. MAXWELL, Esq., in the chair.*

The following reports were presented:—

## DIRECTOR'S REPORT.

*Combarton Mine, Aug. 17.*—We have disposed of 104 tons 3 cwt. 7 grs. of ore since our last annual meeting, which produced the amount of 2016*l.* 14*s.* 6*d.*, which sum, together with the product of a call of 1*s.* per share, made on the 4th December, 1846, has been appropriated towards prosecuting the works of the mine. We have thought it advisable to abandon the operations on Harri's, as well as the Gorsewell's lode. The former has produced only 7 tons of ore during the last 19 months; and the latter, notwithstanding the extensive old workings upon it, has proved entirely unproductive. We have prosecuted the workings upon the lode north of Newton's shaft, with all possible energy, and should advise their being followed up until the state of the lode under the old works to the northward has been fully ascertained. The value of ore now at grass amounts to about 180*l.* The number of 1908 shares responded to the last call of 1*s.* per share; it has been our duty, therefore, to declare 39 shares forfeited for non-payment, according to the regulations of the company. We regret to state, that our old lode has been comparatively unproductive in the last 10 fathoms of its back; there is, however, we believe, sufficient ore still standing to enable us to work the mine upon its own resources, for some months to come; during which period, we recommend that operations be confined to proving the old lode in depth and length below the 109 fm. level, and to driving on the course of the lode north of Newton's shaft. We have every reason to be satisfied with the exertions and abilities of our agents.

## CAPTAIN'S REPORT.

*Combarton Mine, Aug. 17.*—Since our last general meeting, he have completed the pressure engine on Vivian's shaft, and have fixed a lift of pumps from the 87 fm. level to the 109 fm. level. A cross-cut has been driven east 24 fms. to the main lode, and we have driven 28 fms. on the course of the lode, which has produced good ore for 8 fms. in length, but both levels, driving north and south, are at present poor. We have sunk two winzes on the course of the main lode, from the 87 to the 109 fm. level, and have taken away most of the ore ground between the two levels.

*Vivian's.*—The main shaft has been sunk 4 fms. 6 in. under the 102 fm. level; but, in consequence of an alteration for the worse in the appearance of the country, it has been thought advisable to suspend the shaft, and to commence sinking a winze under the 103 fm. level, about 9 ft. south of the cross-cut, on the course of the lode, which we have carried down about 2 fms.; the lode in it is now about 2 ft. big, and is producing good ore. The adit level, north of Newton's shaft, has been driven 87 fms. towards some old workings; the lode in this end is principally made up of soft spar and mudiic; this level must be driven about 15 fms. further, to come under the old men's workings, when there is a probability of its becoming productive. A winze has been sunk 8 fms. deep under the 57 fm. level, upon Harri's lode, which is generally poor, with very hard ground; these circumstances, combined with a great increase of water, and other unfavourable appearances, have caused us to suspend operations on this portion of the mine. We have cleared out all the old workings at Gorsewell's; and, after driving 14 fms. upon the lode there, and sinking a winze from the adit level 12 fms., have abandoned further proceedings upon it, in consequence of the poverty and hardness of the ground. We have now three tribute pitches at work upon the main lode, and one upon the middle lode, and all are returning profit to the proprietors and adventurers.

The auditors reported a balance in favour of the company, in the hands of the bankers, and in sale of ore, to the amount of 411*l.* 3*s.* 1*d.* They had examined the whole of the accounts of the mines from August, 1846, to July, 1847, and only found an error in the July cost of 1*s.*, in favour of the company.

The resolutions passed will be found in our advertising columns.

## GREAT MICHELL CONSOLIDATED MINES.

At a meeting of adventurers held at the offices, Old Broad-street, on Tuesday, the 31st August, the following report from Capt. T. Richards, dated the 30th inst., was read:—"The engine-shaft has been sunk about 4 fms., making the present depth 35 fms. below the surface—the lode throughout these 4 fms. has produced good stones of ore. The 35 fm. level is extended east of the engine-shaft about 3 fms.; the lode in which is 7 ft. wide, composed of mudiic, spar, and rich stones of ore—and promising improvement. This level is extended west of the shaft about 8 fms. The lode here is also large, full 64 feet wide, containing mudiic, fluor-spar, and good stones of ore. The ground in these levels is at present hard; however, the lode has not diminished in size; and, judging from the present appearances, there is every reason to believe that we are at no great distance from more favourable results. The winze in the 22 fm. level, west of the engine-shaft, has been sunk about 8 fms., making the present depth 13 fms. below the 22. The lode throughout the whole 8 fms. sunk has been of the most promising character, consisting of mudiic, spar, and fluor, intermixed with rich stones of grey, black, and yellow ore, and may be considered good tribute ground. We have this day commenced driving a 35 fm. level from the bottom of the winze; and when extended sufficiently far enough west to admit of again sinking, it shall be resumed without a moment's delay. We are now dressing a small parcel of ore, about 12 tons, of good quality. I consider the prospects of this concern to be highly encouraging; looking at the present shallow depth, and limited extent of operations, there is every ground for satisfaction with what has already been discovered." A statement of the cost, to end of July, accompanied by the cost-sheets, &c., was submitted to the meeting, showing a balance in favour of company of 130*l.* 16*s.* 2*d.*, when it was resolved, that a call of 10*s.* per 2500th share, be made payable at the London office, on or before Monday, 19th September next.

*BALLESWIDEN.*—At a meeting of adventurers, held at the mine, on the 31st of August, the accounts—showing an expenditure of 4652*l.* 5*s.* 11*d.* for the two months, and leaving a balance in favour of adventurers of 668*l.* 8*s.* 2*d.*—were examined and allowed; whereupon it was resolved to authorise the purser to make an immediate dividend to the adventurers of 7*s.* 6*d.* per share, making 609*l.*; leaving a balance to be carried to next account, in favour of the adventurers, of 59*l.* 8*s.* 2*d.*—The agent's report of the mine was considered to be more favourable than ever—the quantity of tin sold this last two months amounted to upwards of 100 tons, which far exceeds the sale of any other mine in the county.—The accounts showed:—By tin sold, 5271*l.* 18*s.* 9*d.*; sundries, 41*l.* 12*s.* 4*d.*;—532*l.* 9*s.* 1*d.*—Wages for May and June, 3156*l.* 5*s.* 4*d.*; coals, 218*l.* 15*s.*; carriage, 98*l.* 18*s.* 9*d.*; merchants' bills, 1018*l.* 11*s.* 10*d.*; lord's and boulder's dues, 159*l.* 15*s.*; balance in favour of adventurers, 668*l.* 8*s.* 2*d.*

*CRADDOCK MOOR.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 18th of August, the accounts were presented—showing a balance of 104*l.* 1*s.* in favour of adventurers—which were allowed and passed, and a call of 10*s.* per share made, payable immediately at the Devon and Cornwall Bank, Liskeard. The following report from the captain was presented:—"Since our last report, we have finished cutting the ground, and have fixed the lift, put in a pent-house, timbered down the shaft, and put the engine to draw the stuff, which it does very efficiently. We have also sunk the shaft about 7 ft.; the shaft is now about 35 fms. deep; and as we have everything properly prepared for sinking, and the lode improves in appearance in depth, I beg to repeat what was recommended in our last report—namely: to sink the shaft another 10 fms. before driving. The lode at present in the shaft is from 18 to 20 in. wide, composed of peach, fluor-spar, and black and yellow ore throughout, but not in sufficient quantity to save."

*EAST WHEAL ROSE.*—The accounts for the months May and June show—Proceeds of lead ore, sold 14th May, 2692*l.* 6*s.* 7*d.*; on the 29th, 3285*l.* 13*s.* 10*d.*; on the 11th June, 1938*l.* 0*s.* 6*d.*; on the 26th, 8997*l.* 10*s.* 8*d.*; Cargill adventurers, for water charge, agency, &c., 214*l.* 4*s.* 10*d.*; Share of profit in Cargill Mine, 1034*l.* 1*s.* 10*d.*—16,736*l.* 16*s.*—By costs for May and June, 7758*l.* 18*s.*; payment of dividend (50*l.* per share), 6400*l.*—leaving balance now in hand, 2582*l.* 18*s.*

*GONAMENA.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 18th August, the accounts were presented—showing a balance of 614*l.* 4*s.* 7*d.* against adventurers—which were allowed and passed; and a call of 2*s.* per share made, payable immediately at the Devon and Cornwall Bank, Liskeard. The following report from the captain was presented:—"The winze is holed to the 34 fm. level, and four men are stopping the backs; the bunch of ore is shortening as we rise, also getting smaller, being now about 9 in. big; the east end, at the 34 on the north lode, is 12 to 14 in. big in the bottom, and composed of peach, capel, and spar, with some black ore. Both levels, on the bridge lode, at the 34 are suspended, and the men removed to other parts of the mine. The engine shaft is sunk under the 34 fm. level 11 fms., where a plat is cut; and the men expect to begin to sink again next week. We have commenced a cross-cut south; and hope to intersect the lode in the 45 fm. level within a week. In the east adit, driving north, no lode has been cut since the last meeting. We propose soon commencing a winze under the 34, on the course of ore, to meet the 45 fm. level coming in from the shaft. We expect to sell from 20 to 30 tons of ore before our next meeting." Since the meeting, the lode has been intersected in the 45 fm. level, and found 18 in. big, of peach, mudiic, and prinn; no ore—the same as just over in the 34, but more kindly than in that place.

*TAVY CONSOLS.*—A meeting of adventurers was held at the Central Hall, Plymouth, on Tuesday last—Capt. PAUL (of Tavistock), in the chair.—Several shareholders, who had allowed their shares to remain two calls in arrear, having had their shares forfeited, made an application to have them restored on special grounds, but the shareholders refused to accede to the application, and the forfeiture was confirmed. There are now no calls in arrear; the mine is in full work, the engines and machinery are all paid for, and at present it is not at all probable that there will be any further calls. A report of the state of the mine was read from Capt. Martyn, which was very favourable and satisfactory. The last sale of ore again realised more than was expected; and it is believed that, at the next sampling, there will be 60 tons for disposal. The shareholders were well pleased with their prospects.

*TOKENBURY.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 18th August, the accounts were presented—showing a balance of 134*l.* 10*s.* 5*d.* against adventurers—which were allowed and passed, and a call of 8*s.* per share made, payable immediately at the Devon and Cornwall Bank, Liskeard.—The following report from the captain was presented:—"The 65 fm. level, in Crouch's shaft, is driven south on Browning's cross-course nearly 90 fms.; at this point a lode is cut and opened on, a few feet west of the cross-course, where it is found to consist chiefly of peach and spar; it is in width about 2 ft., and its present appearance will warrant a further trial. Twenty fms. below this lode another is driven on, west from the cross-course about 17 fms.; it is in the present and is 2 ft. in, consisting chiefly of spar and

mudiic, spotted with yellow ore; also, in this level (65), an end is commenced to drive east from the cross-course, on E 3 lode, but just now is found to be small and unproductive, as in the same place over it in the 55—in which level, some 10 or 12 fms. further east, the lode holds out encouraging appearances, and there are 2 pitches working, at 18*s.* 4*d.* in the 14. We are also working one pitch, in the 40 fm. level west, at 11*s.*; and one in the back of the 12 west, at 11*s.* 6*d.* in the 14. Ore to be sampled on Monday next, the 23d inst., at Looe, about 35 tons; ore now on the mine, about 18 tons."

*WEST CARADON.*—At a meeting of adventurers, held at Richard Esterbrook's, Liskeard, on the 18th August, the accounts were presented; showing—Received for copper ore, 5228*l.* 9*s.* 7*d.*; for materials, 31*l.* 18*s.* 3*d.*; balance of last account, 2150*l.* 6*s.* 2*d.*—7407*l.* 14*s.*—Labour cost for May and June, 3028*l.* 10*s.* 2*d.*; materials, 1088*l.* 1*s.* 6*d.*; lord's dues, 324*l.* 10*s.*; by dividend paid 1st of July, 1280*l.*; leaves balance in favour of adventurers of 1686*l.* 12*s.* 4*d.*—The accounts were allowed and passed, and a dividend of 3*s.* per share declared, payable at the Devon and Cornwall Bank Liskeard.

*WHEAL HOPE.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 19th August, the accounts were presented—showing a balance of 42*l.* 16*s.* 11*d.* in favour of adventurers—which were allowed and passed, and a call of 1*s.* per share made, payable immediately at the Devon and Cornwall Bank, Liskeard. The following report from the captain was presented:—"Since our last report, we have extended the adit level, on the horse lode, about 4 fms.—being now about 135 fms. from tall; in this level we have had a hard bunch of granite, about 2 fms. behind the present end, in which we drove 6 or 8 ft.; since then it has come into the killas again; the lode varies from 9 to 12 in. in width; it consists of grey ore and mudiic, coated with black copper ore, but of coarse quality; the ground in the end has a favourable and kindly appearance; in driving south, on the lode, we are daily in expectation of cutting another lode; it appears, by the look of the ground, and other indications, as if we were very near it; in the bottom level, on the old lode, we have extended, since our last report, about 4 or 5 fms.—this lode is of much the same character as when we last reported; the end is still in granite; but we expect, in a short time, it will come into the killas strata, and also intersect a north and south lode. We have cut several streams of water in this end lately, which I expect is coming from this lode."

*WHEAL MARY.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 19th August, the accounts were presented—showing a balance of 109*l.* 15*s.* 5*d.* in favour of adventurers—which were allowed and passed, and a call of 2*s.* per share made, payable immediately at the Devon and Cornwall Bank, Liskeard. The following report from the captain was presented:—"Since the last report, we have driven the 80 west on the old lode 9 fms.; the lode in the present end is not so good as it was for some fathoms behind it. In the 50 end west the lode is at present poor, about 18 in. wide, composed of capel, quartz, &c. The 35 east, on the old lode, has been extended 3 fms. beyond the cross-course mentioned in the last report—the lode in it is 12 in. wide, and composed of capel, quartz, and a small portion of black ore. We have also extended east and west from the 25 cross-cut on the south copper lode (intersected from the count-house shaft) 6 fms. each way; it is a promising lode, about 2 ft. wide, containing a small portion of ore throughout. The 25 fm. level end west, on the tin lode, is at present poor; but the lode in the eastern end at this level is worth 20*l.* per fm.; and the lode in the back of this level, for 20 fms. in length, will average in value full 14*l.* per fm.; and in the winze, sinking under the level, the lode will average in value 15*l.* per fm. The shaft on this lode is sunk to the 85, and within the last few hours the lode has been intersected at this depth, where it has a promising appearance; but we have not yet had time to get through it, and cannot, consequently, form any correct opinion of its size and worth. By a rough estimate, we have at surface about 800*l.* worth of tinstuff, the greater part of which has been raised from the above lode; and, should it maintain its present character in depth, we shall, by laying open more ground, be enabled to make good returns. Before our next meeting, we expect to dress and sell from 400*l.* to 500*l.* worth of tin. We are now extending the 25 cross-cut south from the engine-shaft, for the purpose of intersecting the tin lode 100 fms. further west—we have 18 or 20 fms. to drive to reach it. We have not yet discovered the lode in the 50 cross-cut south. We have cut a lode in the 25 cross-cut north; it is in 4 branches of 12, 18, 8, and 8 in. respectively, but poor—being composed of mudiic, spar, prinn, &c. There are, however, two more lodes, within a few fathoms to the north, which, as the ground is favourable for driving, we hope shortly to intersect. The 70 cross-cut has not yet reached the lode; and from its dip, as far as ascertained, we have still about 12 fms. more to drive to intersect it. We have erected one calining oven, capable of calcining 7 tons of tin per month; but, in consequence of our tin returns from the stamps being considerably more than a supply for one oven, we are under the necessity of building another. These two ovens will, together, enable us to calcine 15 tons of tin per month. This quantity, according to our present prospects, can be supplied from the tin lode. But our stamping power, we fear, is not sufficient; and the best means of increasing it will, probably, be to erect stamps, to be worked at night by our drawing machine wheel. Since the meeting, the lode has been intersected in the 50 fm. cross-cut, and found about 4 ft. big, and containing two branches of copper ore—one 6 in. the other 15 in. in width."

*WHEAL SISTERS.*—At a meeting of adventurers, held at R. Esterbrook's, Liskeard, on the 19th August, the accounts were presented, showing—Received for copper ore, 1268*l.* 5*s.* 1*d.*; balance of last account, 1005*l.* 7*s.* 11*d.*—Labour cost for May and June, 997*l.* 10*s.* 7*d.*; materials, 287*l.* 13*s.* 5*d.*; lord's dues, 78*l.* 8*s.* 2*d.*; by dividend paid, 1st July, 512*l.*; leaves balance of 398*l.* 0*s.* 10*d.* in favour of adventurers.—The accounts were allowed and passed.—The following report from the captain was presented:—"The shaft is now sunk to the 70 fm. level, a shaft plat cut, and the cross-cut driven 9 ft. towards the lode—leaving about 9 ft. more to drive to intersect it; in driving this cross-cut, we intersected a branch, or dropper, about 18 in. wide, which, according to its present dip, will fall into the lode a few fathoms below this level. The 60 fm. level west has been driven 7 ft. west of the great cross-course; but, we are sorry to say, without meeting with the course of ore as in the 50 fm. level above it. The stopes in the bottom of the 50 have also considerably fallen off in value—nevertheless, the lode in both levels maintains its size (being 4 to 5 ft. in width), and underlies not more than 6 in. in a fathom, and contains a great deal of mudiic, as it did in the 40 fm. level, above the excellent course of ore which we had in the 50 fm. level. We beg to recommend the employment of three pares of men on tutwork, as follows:—One to prosecute the 70 fm. level; another to drive the 60 fm. level further west, under the western course of ore in the 50; and the third to drive south on the cross-course, to intersect the new and valuable tin lode discovered in Mary Consols sett, which lode runs a considerable distance through this sett, and has now a course of tin in it within 80 fms. of the boundary, worth about 20*l.* per fm. It is to be hoped that as Sisters' lode has been most productive near the cross-course, this tin lode will also improve in value as it approaches the cross-course where we propose to intersect it. We are also driving from the 40 east from the shaft, to cut this tin lode in the eastern part of our sett. We expect to have 100 tons of ore for our sampling three weeks hence; and it is to be hoped that, by prosecuting the most important points, we shall be enabled shortly to increase our returns."

## MINING NOTABILLIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

*CALLINGTON.*—In consequence of the extraordinary rumours respecting the improvements and discoveries made here, I visited the mines for the purpose of ascertaining the correctness of the same, and I was very much pleased to find that they have effected some important discoveries. I saw some excellent stones of lead, containing a large portion of the sulphate, red oxide, and grey silver ore—some of the stones, I should think, were upwards of 2 lbs. in weight. The copper lode in the 70, east of the small cross-course, is very rich, being nearly 2 ft. solid, and, in my estimation, worth 50*l.* per fm. At Kelly Bray, the lode continues just the same—rich in black and grey ore, and the ground very easy; but they are not sinking the shaft.

*DYFNGWY LEAD MINES.*—We have had occasion to report on these mines in our last three Numbers, and we have much pleasure in continuing our review of the operations in this part of Montgomeryshire. These mines are well known to mineralogists as comprising the well-known Delivé and Esgrail-gald lodes on the Plynlimmon range. Messrs. Pugh and Williams are in possession of some portion of the Esgrail-gald lode, which, as seen in Cyfarthfa, is of immense width, from 30 to 40 ft. rising up from the bed of the brook, in great strength of crystallization, and yielding very fine ore. The Dyfngwyr Company have attacked the Delivé vein, and the lead ore, from the 16 fm. level; and, in the several stopes springing out of it, it surpasses the most sanguine expectations of the adventurers; while the 22 fm. develops such a further abundance of rich ore, at the greater depth, as to convince all who have visited this mine that it is altogether one of unusual and extraordinary resources. The Esgrail-gald lode is a mineral wonder in the opinion of a most competent judge. But, without going into this lode, we will take leave to refer our readers to the reports we have previously published, from what the active and experienced manager has detailed. Mr. John Reynolds (for he is the manager) foretold that the lead would, to the north, east, and west of the engine-shaft, in the 22 fm. level, bear down, and greatly improve under this level; and he calculates, without a doubt, from the present indications, that, in the next 16 fms. deeper, the company will meet with large and splendid courses of lead. From the 16 and 22 fm. levels, on the Delivé lode, several cargoes of lead have been shipped from Port Derwent-lay, on the River Dovey, for Holywell, which have assayed 74*l.* per cent., and realized 11*l.* 6*s.* per ton. These mines are now yielding from fifteen to twenty tons per month—being upwards of 2000*l.* per annum; and, in the course of some months, the yield will be raised to 50 tons of lead per month, producing nearly 7000*l.* When the Esgrail-gald lode shall be fully open, the company may reckon upon from 100 to 150 tons a month—being (say) 14,000*l.* per annum—and this is the result of enterprise and capital; for, to get profits out of mines, capital, as in manufactures, is the raw material that enriches the capitalists. The Esgrail-gald lode, 40 ft.



wide, is a continuation of the Great Plynlimmon vein. The lead crops to the surface of the rock, and continues to widen as the men proceed, getting stronger in the forebrest. This gigantic lode passes within 100 yards of the present Dyffrynwg adit, where it is proposed to sink a shaft, and, by a cross-cut of 50 fms. in length, intersect the Eglair-gallid lode, communicate with the works, and afford an inexhaustible supply of ore for 48 years to come, which is the time the present company will have possession of Dyffrynwg, on terms so favourable, that, from the black jack raised, of which we have as yet taken no account, but which leaves a profit of 30% on 20 tons, the royalty is covered, or becomes *nil* to the company. In our next Number, we shall be able, we trust, to present our readers with the monthly report, and also with the report of a competent judge, who is now on his way to survey this property, upon which some capitalists are about to expend from 5000*l.* to 7000*l.* in carrying out the operations we alluded to in our last, and from which they may confidently rely upon large profits, without the possibility of risk.

**WHEAL FRANCO.**—In this mine there is an improvement in the 32 fm. level, east of Spry's shaft, and in the shallow level, west from Burnell's shaft. In the 47 fm. level the agents expect they are very near the lode, as there is a great deal of water issuing from the end—the lode not having been cut up to this time is a proof that it is more perpendicular than in the levels above, which is a very encouraging feature. The shaft is nearly down to the 62 fm. level. A great effort has been made to depress the price of shares by an unfounded report, that the lode had been cut poor in the 47 fm. level.

A valuable lode of tin, about two feet wide, has lately been discovered in Canon's Town Mine, near Trelawney. The recent discovery, added to others in course of working of similar strata, and running parallel with the adjacent mines, it is to be hoped, will be the means of considerable employment for the vast mining population in that district; and no doubt is entertained but the spirited adventurers will be amply remunerated for their outlay, which is merely trifling compared to the present prospect. This undertaking was commenced about four months since. A good lode of tin has lately been discovered in BALMOON Mine, in the parish of Lelant; and a rich lode of tin has lately been discovered in WHEAL REETH Mine, in the same parish; it is calculated to be worth 100*l.* per fathom. The rich tin mine, WHEAL MARGARET, is making ample dividends; and Leland parish is about to resume its wonted activity in mining; and it is to be hoped that better days are coming, both for the miners and adventurers. —*Conwall Gazette.*

#### EXTRACTING COPPER FROM ITS ORES BY ELECTRICITY.

A correspondent, who will be readily recognised by our readers, in forwarding our notices on this subject to the *Lake Superior News* for insertion, accompanied them by the following remarks:—"The process referred to is a most ingenious and beautiful theory, admirably adapted to a laboratory experiment, but obviously inadequate to operations on so gigantic a scale as would be necessary to meet the requirements of so extensive a range as that of Lake Superior. But, to our notes. First of all, then, be it understood, there is an egregious error in the very heading of the article in question—"Smelting Copper Ores"—inasmuch as there is no smelting of the copper ores at all; and it is necessary that this fact be perfectly comprehended. In the next place, it is evident that the system in question is inapplicable to the traprock, or any other rock through which native copper may be disseminated—or, if it be applicable, the pure metal must be degenerated back to a soluble salt—sulphate of copper—which will prove a process as tedious and expensive as that of extracting it from the rock by the present mode. Having taken this view of the case, it is but just that another should be stated; and I do so with much pleasure, in the full hope it may prove of service to the mining interest in this remote district. And here, again, let it be remembered, that the ores to be treated as follows, must be sulphuretted, and with these we shall find no difficulty. Roast the mass in the open air, as proposed; a very little wood will be required, because the sulphur, when once ignited, will be found ample to sustain combustion—in this action, and the chemical process advances as follows: the sulphur volatilized is replaced by oxygen, and could the process be perfected, the whole of the sulphuretted copper ore would be concentrated into a firm, insoluble, body, of a yield of 50 per cent. of copper, and this body would be an oxide. This method of description, however, is not quite so intelligible as I could wish; allow me, therefore, to take another course. Suppose, then, that we have 100 tons of bi-sulphuret of copper ore, yielding 10 per cent. of copper. This, we will suppose, to be raised into a cone, the diameter of which at the base shall be 30 ft., and the cone interstratified with two courses of wood; set fire to this at sun-down, and by the morning the sulphurous vapours will be rapidly escaping; and, of course, as the ore was a bi-sulphuret, every volume of sulphur is now progressing the ore to a sulphuret instead of a bi-sulphuret. The sulphuric acid thus generated has partially decomposed the mass, which, together with the humidity of the atmosphere, converts the associated iron into a friable hydrate of the peroxide of iron. From the sulphuret, one-half of the copper is advanced to an oxide, yielding about 50 per cent. of copper, which is an insoluble body, and easily separated by the process of washing; but, between the sulphuret and oxide there is an intermediate stage, and this a sulphate of copper, which is a soluble salt, and in a proper state to be precipitated either by the old method, 'iron,' or by that called 'electricity.' The inference to be drawn from these notes are:—1. That native copper must be extracted and disposed of as heretofore from the mines. 2. The rocks containing native copper must give up their contents either by the washing process after crushing, or by smelting; but the former is the most preferable. 3. The mineralised rock containing sulphuretted ore must be advanced, one portion to a regulus or oxide, the intermediate to a sulphate; the former must be fused, the latter must be precipitated either by iron precipitants or electricity, as referred to above. My sole object in throwing out these hints is with a view that some economical plan may be adopted to answer the requirements of the mines on Lake Superior, and as such I hope you will bear with this lengthy intrusion upon the columns of your interesting Journal.—O. H. M.: *Portage-Resort, Saint Ste. Marie, July 27.*"

**SMELTING COPPER ORE.**—There are establishments for smelting copper at Boston and at Baltimore. At Boston the smelters have long been extensive refiners and manufacturers of copper, and they manufacture the product of their smelting-works. At Baltimore the ore has been chiefly obtained from Cuba; at Boston principally from Cuba and Chili. The Swansea (Welsh) method of smelting, with reverberatory-furnaces, both for calcination and reduction, has been adopted, but they use equal parts of anthracite and bituminous coal. At Boston, the German method, with calcination in the open air, and reduction in the small upright blast-furnace, with anthracite coal alone, is preferred. In Baltimore they have six or eight furnaces in operation, with an experienced manager from Swansea. In Boston the arrangements are on a much more extended scale. Freight from Cuba to Boston or New York are much lower than from Cuba to Wales. It is suggested that the best method for smelting would be, as in England, to carry the coal to the ores. What is the nearest place to the mines on Lake Superior, where there are anthracite coal mines? It is estimated that a ton of anthracite coals will reduce 2 tons of 20 cent. ore. About \$55 are paid per ton at Boston, for 20 per cent. ore; freight from Cuba are over \$6, and from Chili \$15.—*New York Tribune.*

**BALTIMORE COPPER SMELTING COMPANY.**—This company have recently commenced the manufacture of refined ingot copper, designed for the supply of foundries and other workers in brass; and, as far as it has yet been submitted to the test of the practical working, is said to have met with decided approval. An agent of this company has recently visited the Lake Superior Mines, with the view of contracting for a supply of mineral from this region, convinced that the native copper, as found here, is the most superior kind for the manufacture of their "refined ingot" article, being so alloyed with silver as to render it exceedingly flexible and brilliant.—*Lake Superior News.*

The apparatus for the smelting-works on the Jackson Company Location (known as the iron ore tract, near Dead River), went up with the *Independence* on her last trip, under charge of Mr. S. T. Carr, agent, who had also with him some 12 or 15 men to be employed in throwing out the ore to be smelted. The furnace and necessary buildings, we are informed, were erected during the past winter—so that, in a month or six weeks, we shall, undoubtedly, hear of them in full blast. The ore is known to produce iron of a most excellent quality, mined with remarkable ease, rich per centage, and inexhaustible.—*Ibid.*

**QUEBEC MINING COMPANY.**—The schooner *Chippewa* came down from the Canada shore of the lake on Sunday last, whither she had been with a cargo of lumber for the Quebec Mining Company, bringing with her from the works of that company several barrels of rich specimens of ore. Some of the specimens (grey sulphuret of copper) are certainly equal to, if they do not surpass in richness, anything of the kind we have met, and elicit the admiration of all who examine them. We take pleasure in congratulating our excellent friend, Capt. O. H. Mathews, the agent, as well as the company, at these early developments of mineral wealth. We have always heard the Pont aux Mines district reported as not inferior to the most famed section of the lake; and, certainly, the reports hence, and the specimens that have arrived, bear ample testimony of its correctness.—*Lake Superior News.*

**IRON CARRIAGE WHEELS.**—A carriage-wheel, composed entirely of iron, and constructed upon purely scientific principles, has just been patented by Mr. I. Holmes, of New York; it is called the "Double-Dished Metallic Carriage Wheel." There is a double row of slim iron spokes with counter sunk heads, diverging alternately from the outer and inner rim of the hub to the felloe, where they are also counter sunk and effectually fastened—the spokes thus drawing both ways, and throwing as much of the weight of the carriage upon the upper as the lower part of the wheel; the principle is that of an arch. Should the iron felloe break, which is scarcely possible, the wheel, under ordinary circumstances, could not be made to fall to pieces. The burden which a very slight wheel thus constructed is capable of bearing is immense, if we may credit the calculations of Prof. Comstock; it has an exceeding light and graceful appearance, is not liable to get out of order, and can be purchased at about half the cost of the ordinary wooden wheel.

#### REMINGTON'S MAGIC AERIAL BRIDGE.

Our attention has been called to the model of a bridge, perfectly unique in its design and structure. The inventor is Mr. Remington, of Alabama, United States—a gentleman eminently distinguished for his scientific attainments, and the originator of many useful and curious inventions in mechanics.

This bridge presents quite a new feature in art, and it is thought will prove highly serviceable in connecting opposite shores of rivers, pleasure-grounds, marshy land, or wherever a foot-bridge is required. Its durability is great, its lightness and elegance marvellous, and for economy, it is declared that a bridge might be built over the Thames for 1000*l.* The first impression, is a feeling (from its aerial lightness and appearance) of the utter impossibility of its bearing even a few pounds weight; but it is asserted that it will bear a regiment of elephants.

A bridge, constructed under the superintendence of Mr. Remington, by Mr. T. Lowe, master-carpenter of the Surrey Zoological Gardens, is to be exhibited at that establishment in a few days. Its proportions will be as follows:—

Length of bridge	83 ft. 7 in.
Length of waterway	30 0
Height from water-line	7 0
Width	4 0

The laths, or stringers, forming the bridge, four in number, 1 inch square in the centre. Foot-tread, 3 inches wide, and 3 inches apart, without any central support or intervening braces whatsoever, either from above or below, and constructed entirely of common deal.

A model can be seen daily, 7 ft. by 9 in.; 3 stringers  $\frac{1}{4}$ ths of an inch by  $\frac{1}{4}$ ths, which has borne six men and two half-hundred weights, and would have borne as much more.

**NORTH POOL.**—A meeting of adventurers was held at the mine on Tuesday last, at which the following accounts for May and June were passed:—By ores sold (less dues), 1608*l.* 4*s.* 4*d.*; sundries, 6*l.* 13*s.* 1*d.*—1613*l.* 17*s.* 5*d.*—To balance at the end of April, 412*l.* 3*s.* 5*d.*; costs, &c., for May and June, 1200*l.* 4*s.* 10*d.*—1612*l.* 8*s.* 3*d.*: balance in favour of adventurers, 17*s.* 9*d.*

**BARKEN IRON COMPANY.**—The half-yearly meeting was convened for Monday last; but a sufficient number of shareholders to constitute a meeting not having appeared, an adjournment took place.

**ENDLESS RESOURCES OF THE WELSH MOUNTAINS.**—A valuable mass of red iron ore has been discovered at Llannharry, near Cowbridge, on the property of the Rev. T. Gronow. The yield of ore is abundant, and the quality excellent.

#### ACCIDENTS.

**East Consols Mine.**—T. Nicholls was killed by a stone falling on his head. **Trocan Consols.**—J. Nicholas was killed by a fall of earth.

**Lewis Mines.**—J. Allen, a kibble filler, fell from the 20 to the 60 fm. level, while following his work, and was killed.

**Dowlais Works.**—Daniel Evans was seriously injured by one of the heavy red mine trams, belonging to the Dowlais Company, passing over one of his legs, while near Gellifaelog.

**Countess Pit, Whitehaven.**—As J. Davidson was getting out of the basket in which he had been lowered, he took hold of the chain belonging to the full basket, about to be hauled up, in order to facilitate his movement: while thus grasping the chain, the engine was set to work, when the unfortunate man was drawn to the height of between 3 and 5 fms., whence he fell to the bottom of the shaft. On being picked up it was discovered that, besides various dislocations and severe contusions, he had broken his leg in two places. Medical aid was speedily procured, but to no effect; the sufferer lingered, in intense agony, till the next day, when death put a period to his sufferings.

**Mosley Hole New Colliery.**—W. France was so badly injured by an explosion at one of Mr. Sparrow's pits, that he died the following day.

**Porto Bello, Wetherhampton.**—S. Wootton has died from the effects of injuries received by an explosion at Mr. Davis's colliery.

**Pencology Colliery, near Llanelli.**—J. Harris was killed by a fall of stone.

**Frightful Accident—Six Lives Lost.**—On Wednesday, the 1st inst., the neighbourhood of Waun-cau-gurwen, in the Swansea Vale, was thrown into a state of the greatest consternation, in consequence of the occurrence of another of those melancholy colliery accidents which have so often taken place during the last few years in the principality. It appears that on Tuesday evening last, David Matthews, aged 36, Evan Rees, 37, John Lewis, 38, John Madwarling, 30, Richard Williams, 18, and T. Rees, 17, all colliers, went down to Mr. Townsend Kirkhouse Wood's coal-pit, and remained there until three o'clock the following morning, when Morgan Davies, who had the care of the engine for the last nine years, heard the blowing of the horn at the bottom of the pit—the signal usually given by colliers. The platform was then at the bottom of the pit. After the signal had been given, the engine was put to raise the carriage, or platform, up. Soon afterwards, Morgan Davies saw the flash of the men's candles from the top of the pit, and heard the crash of the carriage, when a short distance from the top falling down. There was no one present but himself; he then went to the house of William Williams and gave the alarm, and Williams and several others were immediately let down by a chain the other side of the pit. They were shortly afterwards drawn up, and reported that all the men were killed. On viewing the chain, it was found that one of the links, which had a small flaw in it, had broken. This caused the accident, and the precipitation of six persons to a depth of nearly 95 fms. As might be expected from such a fall, the poor fellows were literally dashed to pieces, and, when brought up, their remains presented a sad spectacle. On Thursday, an inquest on view of two of the bodies was held at the Leigh Arms, Waun-cau-gurwen, before Charles Collins, Esq., when, after a minute investigation, a verdict of "Accidental Death" was returned, to which was appended a suggestion, that a proper person should be placed at all times at the mouth of the pit.—*Cambrian*, this morning.

**Explosion at Darley Main Colliery—Opinion of the Jury.**—An inquest was held on Tuesday, at the Worsbore Dale, near Barnsley, on the bodies of D. Beevors, aged 30 years, who has left a wife and four children, and John Cawthorne, aged 20 years, the two men were named as being severely burnt on Friday last—W. Ellis, employed at the Darley Main Colliery, said he and Beevors went into the pit last Friday morning about half-past five o'clock. We met J. Thompson, the fireman. Beevors went down the levels towards his work, which is a good distance from the bottom; it is in the 12th beargate. Thompson never told Beevors that he was not to go to the place where he had been working. Can't tell whether Thompson had been through the works that morning or not. There is a good air where I work; can't say so of any other place. It was Thompson's duty to have told Beevors not to have gone if there was any danger.—C. Hammond: I was working in the next hole to where Cawthorne and Beevors were working about six o'clock. My hole is about 30 yards from theirs. Beevors shouted to my brother, and told him his hurried had brought one of the Oaks lamps with him. The blast went off in two or three minutes after. I was a little burnt, Beevors and Cawthorne severely. I was 30 yards from them when it went off. Can't tell the cause. Can only blame the steward, who had been told about putting some boards up in the face of the beargate, to drive some air, which would come back on the other side of the slit. Beevors, in my hearing, asked Thompson two or three times to put some boards up. Thompson said he could not that day, but would send somebody to do it. He has asked him two or three times within the last fortnight. We call them British boards. If the boards had been put up, I most certainly think the explosion would not have taken place. Don't know that the men had refused to work in consequence of the boards not being put up. Both had Davy lamps. I saw them. Thompson said every time he would send somebody to put the boards up. The boards were 20 yards too short.—The Coroner here said, I think nothing ought to be spared on the part of the proprietors to make the works properly ventilated, and to prevent those accidents as much as possible, for no persons' lives ought to be placed in jeopardy for the sake of a few boards, but everything that science and experience can do to prevent such occurrences ought to be used.—J. Parsons stated that Beevors said to him, when going out, if the board had been up the accident would not have happened. Believed if the slit had been opened out the explosion would not have happened. It was Beevors's duty to have opened the slit a fortnight since.—Mr. Locke stated that he went through the workings last Wednesday, and all was in a good state of ventilation, and his opinion was that Beevors not finishing the slit was the cause of gas accumulating, and of the explosion; there was no occasion for boards until the slit was properly opened, and then a sheet would have been necessary.—J. Thompson said, I go round every place in a morning; and if I find a place which is not right safe for the men to work in, I leave a token for them to keep back. Friday as I was going through the works I found Beevors's beargate unsafe; when I got back, I rapped for the men to come down. I am sure when Beevors came down I told him his place was not fit to work in. The next news I heard was the explosion. Had left a pair of plates across the entrance of the 13th beargate, as a token. No one was with him when he passed me at the bottom. Will swear that Beevors never asked me to put any boards up to carry on the air to the face of the 13th beargate. Beevors promised me he would go into the slit. Cawthorne was hurrying for Beevors. Their lamps were dirty that morning.—George H. Smith, surgeon, attended the deceased: they were completely roasted. About three-quarters of an hour before Beevors died, and was expecting to die, he stated voluntarily to me that, if the boards had been put up, which he had asked Thompson to do, to convey the air to the face of the workings, the pit would have been in a working condition, and he should have been well.—J. Kingston, and several others, corroborated the statement of Thompson in several particulars. The witnesses were then called into the room, and confronted one with another, each adhering to his own statement.—The Coroner said he never met with more gross perjury than he had during this inquiry.—He should leave it to the jury to judge which was the party.—He then called W. Cooper, Esq., who said he had heard the evidence; in his opinion the slit ought to have been cut through; had that been done no explosion would have taken place.—The Coroner summed up in an able manner; and, after a lapse of 35 minutes, the jury returned a verdict of "Accidental Death," adding, "through the numerous accidents at this pit there must be some neglect on the part of the managers." A correspondent says, in a postscript, "I have just been informed, that the managers of the above colliery have given some of the witnesses notice to quit their employment, for giving their evidence at the inquest."

#### COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

**MONDAY.**—Hollywell Main 18—Wylam 18—Wall's End Haswell 21—Lambton 21—Whitwell 20—High Thornley 19—Adelaide Toss 20—South Durham 20—Tees 21—West Heddon 20—Ships at market, 21; sold, 21.

**WEDNESDAY.**—Adair's Main 17—Buddle's West Hartley 18—Carr's Hartley 18—Davison's West Hartley 18—Dean's Primrose 17—Delaval Hartley 17—Dipton Tansfield 16—Hastings Hartley 18—Hollywell Main 18—3rd's Redheugh 16—Ravenworth's West Hartley 18—Towmley 17—6th West Hartley 18—Wylam 18—Wall's End Acorn Close 19—Bewick and Co. 20—Bell and Brown 20—Clarke and Co. 18—Kepler 20—Ships at market, 18*l.*

**FRIDAY.**—Buddle's West Hartley 18—Davison's West Hartley 18—Dean's Primrose 16—Dipton Tansfield 15—Hastings Hartley 18—Hollywell Main 18—3rd's Redheugh 16—West Hartley 18—Wylam 17—Wall's End Clarke and Co. 18—Georthe 20—Hebburn 19—6th Killingworth 20—Eden Main 20—Braddley's Hetton 20—6 to 20—Hawwell 21 to 21—Heston 21—Kepler 20—Lambton 20—Marton 20 to 20—Whitwell 21—Kelloe 20—6th Seymour Toss 20—South Durham 20—The Duke 20—Tees 20—West Heddon 20—Cowpen Hartley 18—Derwentwater Hartley 17—6th Sidney's Hartley 17—Ships at market, 16*l.*; sold, 4*l.*; unsold, 7*l.*

#### Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, eleven o'clock.

Bank Stock, 7 per Cent., 196 7/8	Belgian Bonds, 4 1/2 per Cent., 92 1/2
3 per Cent. Reduced Ann., 88 1/2	Dutch, 2 1/2 per Cent., 55 1/2
3 per Cent. Consols Ann., 87 1/2	Brazilian, 5 per Cent., 84
3 per Cent. Annuit., —	Chilian, 6 per Cent., 91
3 1/2 per Cent. Ann., 89 1/2	Mexican, 5 per Cent., 19
Long Annuit., 9 1/2	Spanish, 5 per Cent., 19 1/2
India Stock, 10 1/2 per Cent., 211	Ditto 2 1/2 per Cent., 29 1/2
3 per Cent. Consols for Acct., 88 1/2	Portuguese, 5 per Cent., 81
Exchange Bills, 100 <i>l.</i> 3 <i>d.</i> , 3 1/2 p.m.	Russian, 5 per Cent., 109 1/2

**MINES.**—We noticed last week that a considerable reaction had taken place in the mining share market, and we are, therefore, pleased to state, that that improvement has continued throughout the present week. The transactions have not been confined to a few shares in one or two mines, but transfers to a large amount in several mines have taken place—while the same shares have continued in demand at buyer's prices up to our going to press. We are pleased to witness this manifest improvement, by the investment of capital in a property which we have for a long time advocated as safe and remunerative, when due caution is exercised in the selection of the stock. Mines paying dividends, or meeting their costs, may generally be considered as secure—not being subject to the great depreciation in price which frequently attend new mines brought out at great premiums, and to these purchasers appear to direct their attention—at the same time, ample opportunities are afforded those who are of a more speculative turn to purchase in many new, although improving and progressing, mines.

**East Wheel Rose meeting,** held on the 30th, declared a dividend of 50*l.* per 128th share for May and June—leaving a balance of 2582*l.* in the hands of the purser. The proceeds of the four sales of lead ores amounted to 12,908*l.* in the two months.

In the Callington Mine shares, several transactions have taken place, and at advanced prices. Advances were received yesterday that, in the adit level, South Mine, towards Johnson's shaft, a bunch of silver ores had been discovered—some stones of the red oxide of silver have been shown us which are certainly very rich: this additional and unexpected improvement will have a tendency, no doubt, of raising the price of shares; and, if we may judge from the inquiries since made, that its influence is felt.

We understand that some discoveries of silver have been made in Silver Valley Mine; but we have not seen any official report, as yet, confirming the same.

A large number of Condurrows have changed hands during the week, and they are now becoming rather scarce.

The continued improvement in East Crowndales has caused buyers at advanced prices. West Setons are now eagerly inquired for. Bedford United shares are likely to be in demand; and sellers have increased their former limits. A large number of Heigston Downs shares have changed hands this week.

Carn Brea, Herodsfoot, Trehan, West Wheel Tolgus, Trelawney, East Wheel Rose, Mendip Hills, Holmbush, &c., are inquired for, and may find buyers at or near our quoted prices.

The following shares have changed owners during the week:—Wheal Ash, Callington, Carn Brea, Condurrow, Devon and Courtney, East Crowndale, Gwinear Consols, Herodsfoot, Herodscombe, Holmbush, Mendip Hills, Trehan, Treleigh, Blaenavon, Bedford, Treviskey and Barrier, West Wheel Providence, Heigston Downs.

There does not appear to have been many transactions in the foreign mine shares this week—we believe the business has been confined to Coacac, Australian, St. John del Rey, and Imperial Brazilian.

Dispatches have been received by the National Brazilian Mining Company (per H.M. steamer *Rattler*), by which we learn, that the Coacac Mines are looking remarkably well—the returns having been doubled, and which, should the improvements continue, will be greatly increased.

Important information is anticipated from the Imperial Brazilian Mines, the same having been dispatched by a sailing-vessel the day prior to the *Rattler's* leaving; these letters, which are up to the 2d of July, are looked for with much anxiety, as they are expected to contain some intelligence relative to the Bananal Mines, the newly-acquired property of this company.

The Asturian Mining Company held their adjourned meeting on the 30th, when the directors presented their report, showing that vast profits would accrue from an additional outlay, recommended by an eminent engineer. The profits for the present year will enable the directors to pay a dividend—the propriety of appropriating the same to be deferred for the sanction of the meeting, to be held in October next.

Yesterday, dispatches were received from the mines by the South Australian Mining Company, which we learn, are of a satisfactory and important character; but we are not prepared to furnish them this week.

#### STOCKS AND SHARES—FLUCTUATIONS IN VALUE.

The following table has been prepared, in order to exhibit, at a glance, the fluctuations which have taken place during the past eventful month in the chief public securities and principal railway shares. The greatest variation within a week occurred in that ending the 7th August, during which period Consols fell from 88 1/2 to 86 1/2, a difference of no less than 1 1/2 per cent., and Exchequer bills from 10*s.* premium to 6*s.* premium. In railway shares, Eastern Counties declined from 20 to 19, Great Western from 115 to 109, London and North-Western from 176 to 170, and Midlands from 127 to 120. Towards the close of the month prices have improved, but corn, of which we give the official weekly averages from the *Gazette*, is an exception. The prices of wheat at Mark-lane have been considerably under the official quotations, sales having taken place on Monday, the 30th August, at from 56*s.* to 56*s.* per quarter.

Description of Stock.	Highest Price.	Lowest Price.	At 31 Aug.
Bank Stock	196 7/8	195	195
Three per Cent. Reduced	88 1/2	86 1/2	87 1/2
Three per Cent. Consols	88 1/2	86 1/2	87 1/2
Three-and-a-Quarter per Cent.	90 1/2	88 1/2	89 1/2
India Stock	211	209	210
South Sea Stock	94 1/2	93 1/2	94
Exchequer Bills (1000 <i>l.</i> )	10 1/2	9 1/2	10 1/2
RAILWAYS			
Eastern Counties (share paid up, 14 <i>l.</i> )	20	19 1/2	19 1/2
Great Western (ditto, 8 <i>s.</i> )	115	109	110 ex d
North-Western (100 <i>l.</i> stock)	176	163	162
South-Western (share paid up, 41 <i>l.</i> )	68	60	62
Brighton and South Coast (50 <i>l.</i> stock)	55 1/2	49 1/2	49
Midland (100 <i>l.</i> )	127	116	119 1/2
Manchester and Leeds (share paid up, 82 <i>l.</i> )	101	95	97
South-Eastern (ditto, 25 <i>l.</i> )	36 1/2	33 1/2	34 1/2
York and Newcastle (ditto, 25 <i>l.</i> )	37 1/2	34 1/2	34 1/2
York and North Midland (ditto, 50 <i>l.</i> )	86	77	77
Wheat, weekly average, per <i>Gazette</i>	78 <i>s.</i> 5 <i>d.</i>	62 <i>s.</i> 6 <i>d.</i>	—
Bank's minimum rate of interest	5 1/2	5	5 1/2

#### RAILWAY TRAFFIC RETURNS.

Name of Railway.	Length. Rwy.	Present actual cost.	Price per share	Last Div.	Traffic Returns, 1847.	1846.
Arbroath and Forfar	15	£179,939	26½	3 p. c.	£254	£221
Chester and Birkenhead	15	658,298	30½	—	870	726
Dublin and Drogheda	35	669,248	84	34	975	975
Dublin and Kingstown	7½	473,282	—	9	1207	1878
Dundee and Arbroath	16½	156,223	39	6	—	—
Dundee, Perth, and Aberdeen	47	285,745	35	6	1174	546
East Lancashire	30½	2,307,490	17½	—	1095	—
Eastern Counties	23½	6,513,026	18½	7	12034	9180
Eastern Union	44	531,021	89	—	1108	530
Edinburgh and Glasgow	48	2,275,435	61	6	4259	4375
Glasgow, Paisley, and Ayr	60½	1,567,281	121	7	2814	2422
Glasgow, Paisley, & Greenock	23	835,918	18½	2	1576	1421
Gt. Southern & Western, Ireland	110½	1,342,718	30	—	1834	—
Great Western	241	9,714,939	108½	8	20907	20678
Kendal and Windermere	10½	147,001	24½	—	228	—
Lancaster and Carlisle	70	1,209,913	59	—	1697	—
London and North Western	382	18,042,004	10½	10	46677	48825
London and Blackwall	4	1,102,717	6	1½	—	1486
London, Brighton, & South Coast	137½	5,109,657	49½	7	11285	10240
London and South-Western	186½	5,836,129	61½	9	10252	7977
Londonderry and Enniskillen	14½	—	24½	—	—	—
Lancaster & Leeds	147½	5,086,394	99½	5½	—	7892
Lancaster, Sheffield, & Lincolnsh.	49½	1,676,108	89	5½	3044	1865
Liverpool and Carlisle	28	1,026,985	55	—	518	—
Manchester and Leeds	27½	7,462,273	119½	7	23594	20407
Manchester and Carlisle	68	1,184,066	118	5	2643	2443
Northfolk	70½	1,199,689	105	7	2201	1826
North British	78	1,469,968	30	—	2904	2008
Northumbria and Chester	17	291,184	21½	—	568	—
North Devon	29	1,061,283	26	5	1292	748
North-Eastern	167½	5,886,411	34½	8½	15039	11881
North Wales	28	886,414	54	—	—	1412
Nottingham	28	358,353	52	5½	771	654
Nottingham Junction	19	91,274	—	—	223	—
North, Newcastle, & Berwick	328½	3,563,102	85½	9	10013	7592
North and North Midland	192	2,483,256	70½	10	9287	7816
Total earnings for last week,		£211,535,			being an increase of £23,945 over last week.	







## NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed—  
To THE EDITOR,  
Mining Journal Office,  
25, FLEET-STREET, LONDON.

Also, to avoid trouble, POST-OFFICE ORDERS should always be made payable to WILKINSON SALMON MANSSELL, as acting for the proprietors.

**ADDER'S SPRAY PUMP.**—The communication, signed "Rhonda Collier," is so greatly at variance with all the information we have previously received respecting this invention, that we must hesitate in giving it insertion before making inquiry. Besides, we have nearly completed a descriptive article, with diagrams, and which will appear in next week's Journal, when our correspondent, and others interested, will have an opportunity of becoming better acquainted with the merits of the Spray Pump than they are at present.

**SILVER AND GOLD MINES OF THE NEW WORLD.**—We shall next week resume the publication of this interesting series of papers.

**"M. H."**—There is no cause for the late delivery of the Journal, and must be attributable to neglect on the part of the agent of whom it is ordered:—the paper is regularly issued from our office at eleven o'clock on the Saturday morning, and can be obtained by all persons at, or very shortly after, that time.

**WEST WEALE TANKERY.**—The communication was not received in time for the serious attention which its matter requires before publication, but due notice shall be taken.

**ERRATUM.**—In Mr. Reed's letter on his improvements in Railway Chairs, in last week's Journal, 43d line from top, for "new nails," read "iron nails."

The MINING JOURNAL is published at about eleven o'clock on Saturday morning, at the office, 25, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, SEPTEMBER 4, 1847.

The state of the mining share market generally is not much improved since our last publication. True, there is an improvement—things are firmer, more active, and looking up: and the actual quotations are, in many cases, higher. There is that motion, in fact, which precedes a general and decided advance—that elasticity which forebuds an enlarged circle of operations; but the enlargement and the advance are, as yet, comparatively limited. The torpor of the money market at large is one chief cause of the torpor of the market of shares; and the very serious extent of failures in the corn trade has contributed to check the rising tendency of mining quotations, as well as in some measure to lower the feelings of confidence and improvement in many departments of business, which, but for this circumstance, it would be our happiness to announce. It is said, indeed, that the sums involved in the corn failures amount to nearly five millions. We hope this is an overstatement; but any such sum would, it is most certain, weaken the ascending wings of our trading and mercantile interests, and, amongst them, very decidedly those of mining. But it would be idle to apprehend the permanency of those, or of similar, causes of depression. Looking at the active industry of this great nation—its skill, and assiduous application to all the enriching and reproductive arts—a prosperous revenue—an employed people—a full harvest—and universal peace—we are free to sprinkle our general mercantile horizon, and our mining especially, with many and encouraging lights.

The anthracite district of South Wales seems to be rising rapidly into importance in the production of iron. Ten years ago there was only one establishment, of three or four furnaces, in operation at Ynisdwyn, in the Swansea Valley—now there are no fewer than nine concerns, possessing 32 furnaces, of which 23 are actually in blast at this time. The following are their names, with the number of furnaces in and out of blast:—

Furnaces.	In blast.	Out.
7 Ynisdwyn—(Mr. Crane's) .....	7	0
11 Talyfer—(Budd & Co.) .....	7	4
2 Ynallt—(Jevons and Wood) .....	2	0
3 Gwendraeth .....	3	1
2 Onllwyn—(Williams) .....	2	0
2 Abernethy—(Neath Abbey Company) .....	2	0
2 Tynsuar—(Norton and Co.) .....	1	1
2 .....	0	2
1 .....	0	1
1 Bannwen .....	0	1
32 .....	23	9

With a fuel so difficult to deal with as anthracite, the quantity of iron produced by each furnace is not so large as the furnaces in the bituminous districts of Wales and Staffordshire turn out, but the quality is acknowledged to be of a very superior character, as is proved by the large quantities which are sent to the mills and forges in Staffordshire. Taking the average production at 50 tons each furnace per week, the whole make of the 23 furnaces in blast is 1150 tons per week, or 59,800 tons per annum—a quantity by no means insignificant. Besides the furnaces already mentioned, there has lately been erected at Briton Ferry, near Neath, a powerful mill for rolling bars and rails from anthracite iron, and capable of turning out about 400 tons per week.

The hindrances, which interfered so much with the progress of her MAJESTY'S steam squadron down the Channel, and obliged the QUEEN, contrary to her first intention and arrangement, to take shelter in Dartmouth Harbour, is another proof, among many previous ones, which might be adduced, of the inexpediency and loss of making a port high up in the Channel, the point of departure for vessels going westward from the southern coast of the kingdom. The Royal flotilla, it appears, stood out of Cowes Roads about 6 A.M. on the morning of its departure; and, with a stiff breeze up the Channel, found itself at day down still eastward of the start, and, for that reason, and because the breeze continued right ahead, brought up for the night in the little haven of Dartmouth. Had the Royal party embarked in the morning at Plymouth, or better still at Falmouth, by nightfall the fleet would have been high up in St. George's Channel, and enabled to pass the night in any of the ports which it would have found on its starboard bow. Instead of that, the first fine August night was wasted in a little roadstead on the Devonshire coast, and the second under shelter of one of the Scilly Islands—thus passing two nights in the English Channel, when, by a better-chosen port of embarkation, the fleet might, in less time than had elapsed since it loosed from Cowes, have been comfortably moored in Liddford haven. We know, of course, that there was no absolute occasion for the fleet's bringing up on the two evenings mentioned, and that the delay at these points was peculiar, and incidental to the squadron conveying the SOVEREIGN and her consort; but a stiff head wind all the way from Cowes, would have told very detrimentally on the speed of any steam fleet, and would have kept it so many hours east of the Lizard, as, by a departure from a port lower down, would have sufficed to carry it clear of the gorge of the Channel, and have given it a good offing into the open sea. What is true in this case, as to a Royal fleet, is true, *a fortiori*, of all other fleets and vessels. If vessels as well, if not better, built, provided, manned, and officered, than any floating this day throughout the circle of the European Seas, are so impeded by the baffling and cross winds of the Channel, how much more are the merchant ships, and packet steamers, carrying the Atlantic and Mediterranean mails, likely to be detained in the narrow sea that washes our southern sea-board. Of course, in these few observations, landmen though we are, it is not our intention to beat the air, or to draw a bow at a venture; but rather to record in this place the best nautical opinions on the subject—namely, that it is both inexpedient and in-

jurious to continue to make so easterly a port as Southampton the rendezvous of mails which are to traverse the western ocean, and also that the foreign mail port of the kingdom should be as contiguous as possible to that sea, over which the mails are destined to pass; and to this end, by the concurrent judgment of competent persons, that port should be somewhere on the southern coast of Cornwall.

## RAILWAY BOARD.

The "Board of Railway Commissioners" has disappointed general expectation. Composed of individuals, however otherwise qualified for business, yet practically unacquainted with the subjects to which its operations were to be directed—it has afforded neither satisfaction nor relief to the House, the railway interest, or the public. Originated to curtail the labours of Parliamentary committees, it has proved itself an entire failure; unnecessarily interfering with some of the minutiae of railway management, it has attempted to become inquisitorial. Professing to economise the cost of Parliamentary proceedings—it has increased them. Forgetting the chief objects for which it was constituted, or unequal to grapple with them—its attention has been mainly devoted to a scrutiny into the financial position of existing companies. Comprising gentlemen of the highest character and abilities—it has been wanting in the required knowledge to rightly direct its operations. Constituted nearly 12 months ago—it has proved an abortion, and yielded disappointment to the House, the railway interest, and the public.

The expectations created in the latter were, that this commission would primarily emanate measures, and obtain the enactment of powers, applicable to future railway legislation, directing its first attention to the following purposes—viz.:

- To devise a salutary check to the promotion and support of any new schemes possessing no sufficient local or national claims upon legislative enactment.
- To institute a process whose tendency would be to relieve the disposable capital of the country from demands which might accumulate with greater rapidity than it could sustain, by retarding the progress of such schemes, however desirable in themselves.
- To provide for a careful and official investigation of the internal merits and public claims of every newly-proposed line, antecedently to its appeal (as an authorised project) for public support.
- To materially diminish or altogether prevent a large amount of the expenditure now incurred as a preliminary to the Parliamentary proceedings.
- To reconcile or dispose of competing lines and opposition from landed proprietors or others, so as to obviate the costly antagonism of which the committee-room has been so often the arena.
- To relieve the Members of the Senate from much of the onerous duty which has accumulated upon them by railway legislation.
- To deprive the Parliament of no part of its control over those plans which the board deemed worthy to reach the doors of its committees, but to present them there unincumbered by misdirected opposition, liberated from prodigal expenditure, and approved by the Board of Commissioners.
- To tacitly condemn in public opinion, schemes found by the board's investigation to be impracticable or useless, by withholding its sanction, rather than by exercising a power of positive negation; and, to employ the force of a strong official recommendation (in cases of competing lines and opposition from landed proprietors or others), rather than that of unappealable decision.

How far these expectations have been realised by the board since its construction, let the fallacious schemes which have been presented, and to which public support has been invited—the disappointed schemers, and their deluded followers—the bills which have become acts, and the bills which have not—the capital sanctioned by Parliament, and the periods in which it may be legally called for—the costs of failure, and the costs of success—the contests engaged in, and the almost equal discomfiture of victors and vanquished—the labours of the committees, and the "No Houses" of the session—and the conflicting evidence of witnesses, arising from local interests or party purposes—decide.

How far their accomplishment has been attempted will be apparent, in the provisions of the two defect bills, and in the fact that the public still remain exposed to nearly all this train of evils, in the near prospect of another session. It is true that an effort was made to tithe the Mint, and the Aulsebrook, and the Commis—but the weightier matters which ought to have been done, were left undone. It would have been time enough to meddle with those, when confidence had been ensured, and public exigents supplied, by a wise and practical disposal of these.

The recent accession to the Legislature of Members thoroughly versed in these matters, will prove an important acquisition in railway enactments, and furnish a guarantee for their efficient operation. It may, therefore, appear presumptuous in one who is no railway shareholder (although he has been an attentive observer), to propound a plan as an antidote to the deficiency. Suggested more than 12 months ago, and before the Railway Board possessed an existence, neither subsequent experience nor commissioners' measures have tended to materially vary its features, or render its provisions nugatory. Intended to be a mere sketch, it was restricted to the objects first named in this article, without embracing or interfering with the legislation requisite to ensure a due control over existing, or future railways, so as to compass their efficient working, and the public interests. The nature and extent of this legislation would be suggested to the board by experience, and practical officers, assisted by railway directors and managers.

## SKETCH.

The United Kingdom to be divided by the board into four districts. The north division to comprehend Scotland, and that part of England situated north of Liverpool, and east of the "Grand Junction Railway;" to be bounded on the eastern side by the "Birmingham and Derby, North Midland, York and North Midland, and Great North of England Railways," to Newcastle. The east division to comprise that part of England situated on the eastern sides of the "London and Brighton, London and Birmingham, Birmingham and Derby, North Midland, York and North Midland, and Great North of England Railways," to Newcastle.

The south division to consist of that part of England situated on the western sides of the "London and Brighton, and London and Birmingham Railways," to be bounded on the western sides by the "Bristol and Gloucester, and the Gloucester and Birmingham Railways."

The west division to include Ireland, Wales, and that part of England situated on the western sides of the "Bristol and Gloucester, Gloucester and Birmingham, and the Grand Junction Railways," to Liverpool.

One or more officers to be appointed for each district, competent to investigate and report to the board the existing modes and costs of transit for passengers and goods, by public roads, canals, or sailing vessels—to furnish estimates of the probable number of passengers or quantity of goods to be conveyed upon every projected railway—and to advise the commissioners as to the amount of public benefit to accrue from its construction.

One or more consulting engineers to be selected by the board for each district, whose services may be commanded to assist upon questions of difference arising between the engineers of promoting or opposing schemes, or objecting landed proprietors and others.

One or more surveyors, conversant with the value of lands and buildings, to be similarly appointed, whose business it may be to report to the board, from personal inspection, the extent and value of injury or otherwise, which would be effected by any proposed railway to the residential, or other property of opponents, or to suggest the best mode of obviating or diminishing the injury.

A full description of every newly-projected railway to be transmitted by its promoters to the Railway Commissioners, by, or before the (1st Feb.), in the year preceding that in which it is intended to apply to Parliament for an Act—such description to set forth the public advantages to be attained, the probable remuneration to the proprietors, the maximum capital required for its construction, the towns and districts to be accommodated, the names and addresses of its promoters, and to be accompanied by an Ordnance map on which the course of the intended road is laid down.

The appointed officers of the board to personally inspect every such projected railway, and report upon it to the commissioners, by, or before the (1st June) following, and the board to express its assent to, or dissent from, the scheme being further proceeded in, by, or before the (1st July) following; such assent or dissent to be made known to the promoters and the public, by announcement in the *Gazette*; after which, the promoters to be at liberty to appeal to the public for the capital required, and to proceed with their surveys.

The promoters of every projected railway, intended to be proceeded with by application for an Act in the ensuing session, to deposit in the Private Bill Office, and with the Railway Board, by, or before the (1st Dec.) following, a list of subscribers, with their residences and amount of capital subscribed; the engineers' estimate of the cost of construction; correct plans, surveys, and sections of the line, and terms of the lands and buildings required, with the names of their proprietors and occupiers. Also (by, or before the same day), with the Clerks of the Peace for the counties in which such lands and buildings may be situate, duplicate plans, surveys, sections, and lists of proprietors and occupiers; and with the respective parish clerks, corresponding duplicates of so much as may apply to lands and buildings, comprised in their several parishes.

The promoters to advertise in the *London Gazette*, and local papers, for three successive weeks in the month of (October), their intention to apply to Parliament in the ensuing session, for powers to construct the projected railway, setting forth in such advertisement the whole of the parishes through which the railway is intended to be carried.

The promoters to serve notices of their intentions on all the proprietors and occupiers of lands and buildings required for their purposes, by, or before the (1st December) following.

The dissentients to the proposed railway to transmit to the Board of Com-

missioners, by, or before the (1st Jan.) following, notice of their dissent, specifying therewith every ground of objection.

In the absence of any such notices, the proposed scheme to be allowed to proceed before the House and its committees as an "assumed bill," sanctioned by the Commissioners.

In all cases wherein notices of dissent shall be given, their grounds to be locally and fully investigated by the officer of the board, within whose district or department they may arise—on whose report the board shall make known its decision to the promoters and dissentients, by, or before the (1st Feb.) following.

In event of such decision being acquiesced in by the promoters and objectors, by, or before the (1st March) following, the promoters to be allowed to proceed as if no notice of dissent had been given; but should the decision of the board be rejected by either party, it shall be laid in evidence before the respective committees on the bill, previously to their investigation of the dissentients' objections.

The several officers of the board to be called upon to give evidence in support of the commissioners' decisions, when so required by the committees on the bill. The commissioners in all cases to fix the period to be allowed by Act of Parliament for the construction and completion of every projected railway.

The expenses incurred by the board in investigations and inquiries made by themselves or their officers, to be defrayed by the promoters of every railway, who shall deposit (50*l.*) per mile with the commissioners at the time of first bringing any new scheme under their notice. The balance of such deposit to be accounted for, and paid over to the promoters by the board, on its rejection of any such scheme; or, on the close of Parliamentary proceedings thereon, as the case may be.

## THE CRICKET STEAM-BOAT EXPLOSION.

On Tuesday afternoon, the jury proceeded to view the shattered remains of the vessel; the scene that presented itself was of the most fearful nature, the whole of the after portion of the vessel being completely destroyed; the massive spring beam which crosses the vessel in a line with the after part of the paddle-boxes being shattered into thousands of pieces; the whole of the flooring of the deck has been blown up, and the lining of the cabin completely removed, only leaving a portion of the iron shell of the vessel; the boiler casing, or shell, which is cylindrical, and about 5 ft. in diameter, and 6 ft. long, with the after end of a hemispherical form, has been rent entirely from the front portion, and forced out through the after part of the vessel—while the tubes, and the whole of the interior of the boiler, have been by the recoil driven against the wrought-iron framing of the engine—the front part of the entablature of which has been destroyed, the columns bent, and the piston-rod of the high-pressure cylinder on the starboard side nearly broken. No injury has been done to the tubes, which, with the exception of one or two on the larboard side, retain their original position; and the steam-chest, which was of a cylindrical form, with a hemispherical top, fitted with two safety-valves, has not yet been found; the vessel was fitted, however, with two boilers, precisely similar in form—so that no difficulty can arise from the absence of any portion of the exploded boiler, its counterpart still remaining. The tubes, which are 66 in number, of 2½ in. internal diameter, and about 4 ft. 9 in. long, present evidence that the boiler has not, as has been surmised, been short of water—the shell of the boiler, and the flange to which the interior was rivetted, is 3½ in. thick.

There are many grave points that will have to be decided by the jury: we are not amongst the number of cavillers who condemn the use of high-pressure steam; but where that agent is employed, there should be extreme care, and none but persons perfectly competent entrusted. It will be the duty of the jury to see whether such has been the case in the present instance, and to strictly inquire into the capabilities of the superintendent engineer, as well as of the engineer of the boat: this is particularly necessary in the present instance, since an explosion, attended with loss of life, happened to the same parties in a vessel called the *Wasp*, which boiler was afterwards removed into the *Cricket*—a similar vessel, but not used, owing to some faultiness in her construction, as was stated at the time. Haesman, the engineer, in the present instance, has been in many vessels on the Thames, and only returned to this vessel from the *Cliven* Steam-boat Company the week prior to the explosion. The pressure gauge employed on board the ill-fated vessel, to our knowledge, indicated only 38 lbs. to the square inch, when the valves began to open; whilst those in the *Ant* and *Bee* worked at a much higher pressure; yet the speed of the *Cricket* surpassed either of these vessels. It will be a point for the jury to inquire, whether the valves had capacity enough to allow the free escape of the steam generated—whether the boiler was sufficiently stayed—and also whether the valves were only weighted to maintain a pressure of 38 lbs., as indicated by the pressure gauge used in the vessel. The superintendent, Polletti, should be also examined, as he had several years' experience as stoker in the *Erva*, Richmond steam-boat, which also worked at a high-pressure; it has been stated that the captain (Martin) has in more than one instance removed weights which had been placed on the levers shortly after the vessel commenced running: this, if true, shows that there has been a recklessness on the part of some one, which ought to be thoroughly sifted. We look forward with much interest to the inquiry, which we shall chronicle at length in our next week's Journal.

In addition to the foregoing particulars, we append the statement of Mr. Elijah Galloway, the civil engineer, who witnessed the explosion; and, having made a careful examination of the wreck, gives the subjoined account of the boiler and machinery:—

The *Cricket* was fitted with two boilers, placed side by side—the starboard one of which is exploded. The boilers were what is termed "tubular"—the fire being contained in a large tube, about 3 ft. in diameter, within the boiler, and, therefore, surrounded by water. In this description of boiler, the flame, or heated air, from the large fire tube, returns to the front of the boiler through a number of small tubes, about 3 in. in diameter, also surrounded by water—there were 66 of these tubes in the boiler in question—these latter give it the name of a "tubular boiler." The chief advantage of this kind of boiler is, that a larger heating surface is obtained in a smaller space than the old-fashioned flues afforded. So far as can at present be ascertained, the explosion seems to have commenced—so to speak—by the separation of the front plate of the boiler, into which both the large and smaller fire tubes are fixed, from what is termed the "shell" of the boiler. From the appearance of the wreck, and the remains of the boiler, it seems evident that the shell flew away from the front plate and tubes in one piece, being projected with a rocket-like force through the bulkhead of the vessel, and along the after-cabin, to the stern-post, which it broke through, and then fell into the water at some distance. Its progress is clearly shown to have been in a direction nearly east, or rather taking a course slightly inclined from the starboard to the larboard side. In its passage it cut through the iron bulkhead, carried away the corresponding timbers, as well as the whole of the after-deck; and, finally, opened a passage for itself through the contracting space, or "run" of the vessel, cutting away all the angle iron, which form what would be the timbers of a wooden vessel, breaking the rudder-post into three pieces, and, in point of fact, laying the two sides of the vessel, which, in the original form, are, of course, nearly vertical, almost flat.

Having thus shown the direction taken by the "shell" of the boiler, it may be stated, that the front plate and tubes were projected in an opposite direction against the framework and machinery of the vessel. This fact is demonstrated beyond doubt, by the appearance on the surface of the front plate of considerable indentations, corresponding with similar marks on the framework and several parts of the machinery. But, for the interruption thus afforded to the progress of the front plate and tubes, the fore cabin of the vessel would have been destroyed, and the passengers on the fore-deck most inevitably have shared a similar fate to those on the after-deck. The funnel and boiler casing, both of which are formed of weak iron, appear to have been projected upwards by the force of escaped steam, which they were totally inadequate to resist. In their progress they carried away the bridge connecting the two paddle-boxes, and fell into the water alongside the wreck. One most important portion of the boiler is, unfortunately, missing up to the present time—this is the "dome," or steam-reservoir, which is placed over the shell of the boiler, and in which are attached the safety-valves. It is supposed that this portion of the boiler must have been blown off at the same instant when the front plate separated from the shell, and that it has fallen into the river at some distance from the wreck. It is, of course, most desirable that so important a portion of the boiler should not be lost, and every possible means will be taken to recover it. The small fire tubes are comparatively uninjured, only two of their number being slightly bent, and this, most probably, arose by their separation from the front plate. The upper range of tubes are covered with the usual incrustation or deposit from the water, and their present condition indicates that the accident did not arise from any lack of a proper supply of water in the boiler.

**THE GREAT BRITAIN.**—This splendid, but somewhat unfortunate, steamship is now on the gridiron of Prince's Dock, where she is being thoroughly inspected, not only as regards the damage which has been done to her exterior plating, but also as regards the strength and durability of her hull and framework; and it gives us pleasure to be enabled to state, upon the authority of a most experienced engineer, that so far everything has appeared most encouraging for the owners. She is quite safe and sound in her hull and frames, not being shaken, strained, nor indicating in the slightest degree anything that would lead to the supposition that her back had been injured whilst imbedded in the sands of Dundrum Bay. Indeed, it is our opinion, and that of many others, who witnessed the position which the noble vessel occupied in Dundrum, that even her sheeting would have been but little injured, had it not been for the "penny wise and pound foolish" system adopted at first, while the vessel was under the command of Captain Hosken. We allude to the injudicious manner in which the coals were thrown under the ship's sides, to be sold to the country people in half-tons and hundred-weights. On more than one occasion the vessel shifted, and, rolling over on them, her plating was injured in many places. It must be gratifying to the Messrs. Bremner—father and son—to behold their gallant charge safely docked in Liverpool, and to reflect that, in discharging their duty to her owners, they have outdone a lasting benefit on the principle of steam navigation.—*Liverpool Times*.



## PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

Dullness, or rather complete stagnation, continues to reign over mining affairs in this quarter of the globe. There is nothing whatever stirring; and it is really scarcely worth while putting you to the expense of postage for this letter. In fact, this is what the French call their *mauvaise saison* in business as well as in pleasure; and it will continue for some weeks longer. Meanwhile, however, speculators are not idle: they are busy preparing schemes of all kinds, to be launched at the very commencement of the annual commercial campaign. Among these schemes, as I have before told you, are many connected with mining; indeed, to repeat what I have more than once said, everything seems to predict that the next season will be the busiest and most important in the mining world which has ever been witnessed in this country. Speculation, having wearied itself with railways, seems now well disposed to take mining matters in hand, on a very grand scale; and many knowing people calculate, that it is not improbable that we shall see the same wild doings in connection with mines, and iron and copper works, that we saw, in 1845, with respect to railways. That France possesses a good field for prudent, well-directed, mining speculation, cannot be doubted. She is not to be compared to England for mineral wealth; but it is certain that not one-half of what she does possess has yet been turned to account. It is, therefore, certain that many of the schemes which will shortly be brought before the public will present every chance of success that the most prudent could desire. But, on the other hand, they will be so mixed up with mere fraudulent projects, that the greatest care must be manifested by capitalists in making a selection of them.

The squabbles between the Municipal Council and newspapers of St. Etienne and the Great Coal Company of the Loire, have not unnaturally resulted in the adoption of legal proceedings. The Company has cited the newspapers, and six members of the Municipal Council, before the tribunals, for defamation. This bold step seems to have somewhat cowed its adversaries—the newspapers, in particular, show unequivocal symptoms of being well disposed to do all they can to get out of the scrape. On the other hand, the company has had an action brought against it, by one of its miners, on the ground that it has unjustly deprived him of an allowance, to which he was entitled, from the reserve fund (he having contributed to it from his wages), on becoming so injured, whilst at work, as to be unable to continue to labour. The case seems as paltry a one as any other mere squabble between master and man; but it excites the greatest interest in the department of the Loire, and others, and is pounced on by the enemies of the company, in the hope that it may be turned to account against it. One great reason, you will remember, for the Government tolerating the giant monopoly of the company was its pledge to act generously towards its workmen. If, then, the company's adversaries should succeed in showing that it acts unjustly—not to say dishonestly—towards its men, they will obtain such a great triumph as will do it immense injury. *En attendant* the decision of the Court, the company and its adversaries carry on a wordy warfare, in the course of which both parties put forth a vast array of figures—the former to prove that it makes large sacrifices to its men, the latter to show that it makes a very large profit from the deductions which it makes from their pay, for the sick fund, &c.

The weekly letter from St. Dizier, of the 26th ult., says—“*Fers battus à la houille* are at 365 to 370 fr.; *fers laminés*, 370 fr. and 380 fr.; classification, 20 fr. and 25 fr. Demands are still feeble; but the manufacture of *aplatis* is so active, that, within the last month, one furnace has turned out 20,000 kils. of the *petit feuillard* each day. Certain descriptions of the cast-iron of the Marais suit admirably this kind of manufacture, which offers good products of excellent quality. It is this which causes the numerous demands that exist.”

It is stated that the first furnace of the mines of Bona, in Algiers, has just been completed, and is already at work with great activity.

Some little changes have just been effected in the vast establishment of Messrs. Alcard and Buddicom (they are Englishmen) of Sottoville, near Rouen. Mr. Alcard has retired from the management of the concern—the sole management of which is vested in Mr. Buddicom. The object of the company is, to construct locomotives and other machines; and they have extensive contracts with the Rouen and Havre Railway Companies. The capital is 2,500,000 fr. (100,000 l.), in shares of 500 fr.; and the capital may be increased 500,000 fr., whenever Mr. Buddicom may think it advantageous to the undertaking.

The shareholders of the Mines of Copper and Lead of Linares, in Spain, are invited to pay the last call before the 5th. Very little is known of this company—the managers of which do not give all the publicity to its affairs which would be desirable in the interest of the shareholders and the public. There is also in Paris a great number of these little companies, got up for the working of particular mines; and the shareholders sometimes would entirely forget their existence, were they not to be called on, from time to time, to pay up calls. This gives rise to awkward suspicions, which might be entirely prevented, if proper accounts were given and published. In such enterprises, mystery does great harm; and it generally turns out that where it exists, things are not as they ought to be.—*Paris, Wednesday.*

**BELGIUM.**—The great iron-works of Seraing, which were founded by your countryman Cockerill, employ day and night upwards of 4200 persons; they extend over a space of 57 hectares, and the buildings extend over 46,000 metres. In this vast concern iron enters as iron, and leaves it manufactured into steam-engines! It can supply annually 12,000,000 or 13,000,000 kilograms of iron, and possesses immense coal-pits. It contains 27 steam-engines, of 1050-horse power, 6 *hauts-fourneaux*, and establishments of all kinds for treating or manufacturing iron, and turning metals to their multifarious uses. It may be truly said of this vast concern, that it is one of the most remarkable establishments in the world.

A demand has been presented to the Government, for the concession of mines of sulphur, zinc, &c., at Amay and Ampoin, in the province of Liege.

There is nothing particular stirring with reference to mines, or iron works—nothing that is of a nature to interest your readers; but almost all our works are busily employed, and almost every branch of our metallurgical industry continues to be in an exceedingly prosperous state.

**MANUFACTURE OF IRON IN ALGERIA.**—The first furnace, of the Company of Mines and Furnaces of Bona, has been finished, and is now in full blast. Several others are in course of construction in other districts; but a great drawback is found to be in the deficiency of coal—wood and charcoal being the chief substances used for smelting, and those are at a high price at present, in consequence of the want of proper means of conveyance, and roads to the forests.

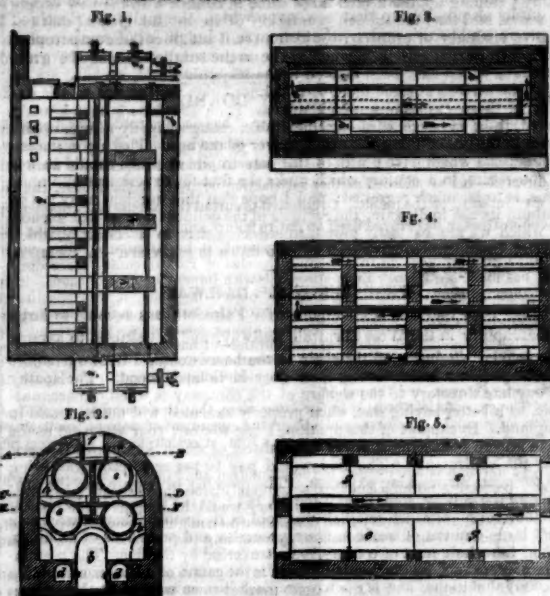
**M. Gauthier, a French engineer, who manages the iron-works of Terni, in the Papal States, has just discovered, after long researches, an iron mine of great richness, extending from Monte Nero to the town of Guaido Tadini. The ore is said to yield 60 per cent. of pure iron, of excellent quality. There are numerous water-courses in the vicinity, which will serve to work the machines necessary for treating the ore. This new mine, and that of Tolfa, will, it is said, supply all the iron which the Roman States can require, including what will be necessary for the projected iron bridges and railways.**

**RAILWAY CALLS.**—The calls falling payable in the month of September, amount to the sum of 3,881,439 l.

**M.M. Fournel and Fisher, engineers of the Northern Railway, have been summoned to appear before the Correctional Police, for having, contrary to the law, allowed three new locomotives to be run on the line without having been previously examined and tested; and for having permitted two others to be used without being furnished with steam-gauge. These gentlemen did not appear, but an avoué representing them declared that a mistake had occurred respecting the day when they were ordered to attend. The court paying no attention to this representation, condemned each of the persons to 1000 fr. fine, for each of these two contraventions, and ordered the Northern Railway Company to be conjointly responsible for the fines.**

**CURIOUS COINCIDENCE.—BRITANNIA-BRIDGE AND THE “GREAT BRITAIN.”**—A correspondent of ours, in conversation, happened to mention he had suggested a plan to Mr. Robert Stephenson for placing the Britannia-bridge from pier to pier by floating the one end of it over to the centre pier, supported upon a wooden tower, built upon the hull of a large iron vessel—at the time, there happened to be in our office another scientific gentleman, who, after hearing the plan explained, observed, it might be necessary for Mr. Stephenson to defer placing his bridge until the *Great Britain* was got off to float it over. On the same day, to the best of our remembrance, that noble vessel was rescued from her perilous situation.

## IMPROVEMENTS IN FURNACES.



[Specification of patent granted to George Grundy, of Manchester, in the county of Lancaster, manager, for certain improvements in Furnaces, and in the Flues and Tiles used in the construction thereof.—*Newton's London Journal.*]

This invention consists in a novel arrangement of the flues and other parts of a furnace, whereby the heat is more effectually applied; and also in certain tiles to be used in the construction of the furnace. In the engraving, a furnace, constructed according to this invention, is shown, containing four fire-clay or tile cylinders or retorts, for generating coal-gas. Fig. 1 is a longitudinal vertical section of the furnace; fig. 2 is a transverse vertical section thereof; fig. 3 is a horizontal section, taken on the line A B of fig. 1; fig. 4 is a similar section, on the line C D; and fig. 5 is a section on the line E F. *a* is the brick-work of the furnace. *b* is the fire-place or chamber, wherein the fuel (which in this case is coal-tar, but other fuel may be used) is introduced; it extends the whole length of the furnace, and is supplied with air through the openings *c*, from two parallel flues *d*, which extend from one end of the furnace to the other, and are furnished with doors at each end to regulate the supply of air. The oven, in which the tile or fire-clay cylinders or retorts *e* are fixed, is of the ordinary shape; and the course of the flame and heated gases, generated below, is indicated by the arrows in the horizontal sections, figs. 3, 4, 5, which are taken at different levels, in order to show the continuous traverse of the heated gases from end to end, or from end to centre of the retorts *e*, until they escape through the opening *f*, in the crown of the oven. The cylinders or retorts are made of tile or fire-clay, and may be strengthened, if considered requisite, by imbedding metal hoops in the clay. Each cylinder is open at both ends, and consists of several pieces, which are joined together, as seen at *g*, fig. 5; the joints being made good with fire-clay, and supported by the fire-clay tiles *h*. The number of joints in each retort will depend upon its length; but this may greatly exceed the length of ordinary retorts, on account of the facility of working at both ends, which the patentee considers an important feature of his invention. The retorts have caps *i*, fitted on each end, furnished with exit-pipes *j*, for the gas. Any accumulation of coal-tar is removed from the retort, by partially opening one end of the retort, and applying an extra pipe to the opposite end; which pipe then acts as a flue, and the draft of air through the heated retort completely removes the carbonaceous deposit.

The patentee states, that the description of the manner of applying his improvements to a furnace for generating gas will enable a person to apply such improvements to furnaces for other purposes. He claims the general arrangement of the furnace and flues as described, which consists in a continuous fire-place from one end to the other, supplied with air from parallel air-flues—thus allowing the heat to be conducted from end to end, or from end to centre repeatedly; together with the peculiar form and construction of tile or fire-clay tubes, and the tiles for forming the joints, as above described.

**PURIFICATION OF MERCURY.**—Mercury may be perfectly purified by agitating it for a considerable time with weak nitric acid. With 2 lbs. of the metal, about 1½ oz. of the acid, diluted with twice its volume of water, may be employed. The mercury, freed from the nitrate thus formed, is to be boiled with pure nitric acid sufficient to dissolve 9-10ths of the metal; the resulting nitrate of mercury is to be reduced to red oxide by heat, and this is to be calcined in a porcelain retort to reduce it. By the action of the first portion of nitric acid, the more oxidizable metals are acted upon; the second portion of acid leaves the metals less oxidizable than mercury in the undissolved portion. As the mercury, reduced by this process, dissolves a notable quantity of oxide, this last is to be separated by agitation with sulphuric acid; it is afterwards to be washed with a very large quantity of water, and dried in the receiver of the air-pump over sulphuric acid. Mercury, thus purified, was employed by M. Regnault in his third determination of its density. M. Millon states, that when a saline solution, such as chloride of calcium, hydrochlorate of ammonia, nitrate of potash, &c., is added to mercury in a bottle, the mercury is always divided into rounded globules, which remain separated from each other for a long time; but what is very striking is, that the size of the globules, which varies enormously, is always connected with the nature of the aqueous solution. Some solutions immediately cause extreme division in the mercury; others, on the contrary, produce only very large globules, to whatever extent the agitation may have been carried; and the same effect is always produced with the same solution. It is to this influence of saline solutions that is due the difficulty often witnessed in collecting mercury when it has been reduced in the moist way.—*M. MILLON: Ann. de Chim. et de Phys.*

**CHEAP GAS.**—The *Stanford Mercury* states, that the proprietors of a large establishment in Lincoln are about to erect apparatus on their premises for manufacturing gas for their own consumption, and it is stated that two or three of the mercantile men in that city have given orders for similar apparatus. It appears that the gas used at the Wakefield house of correction is made on the premises, and costs only 5½d. per 1000 cubic feet. It is stated that the proprietors of the Vauxhall-gardens paid a company 606 l. for filling the Nassau balloon 14 times, and the small balloon 4 times; but on manufacturing gas for themselves, they obtained the like amount for 266 l., thus effecting a saving of 400 l. At one of the towns in the county of Lincoln, gas is said to be made at the cost of 1s. 6d. per 1000 cubic feet.

**IRISH MARBLE.**—We had occasion two or three separate times, about this period of last year, to notice the supply of a parcel of marble to a small extent, since which there have not, that we are aware of, been any arrivals of the kind. We find that a vessel, just arrived in the river from the port of Galway, has brought the large quantity of 82½ tons weight of marble, the production of the county of Galway. This is the same quarter from which the arrivals of last year took place, and which was at the time spoken of as being of a very beautiful description; and for whatever purpose this large arrival of the valuable description of stone mentioned has taken place, this notice of the matter, with reference to the intrinsic value of the importation, and the particular country of supply, will be of interest.

**RATING OF COAL MINES.**—At Bilston Petty Sessions, on Tuesday, among numerous other summonses for non-payment of poor rates, Messrs. W. H. and W. M. Sparrow appeared by Mr. Manby, solicitor, Wolverhampton, to show cause for non-payment of 56 l. 18s. 5d. assessed upon certain coal mines. Mr. Manby contended, on behalf of the defendants, that the rate had been imposed before the sinking of the pits was completed, and the working of the mines become profitable; that they were not by law rateable until the heading was done, as well as the sinking; and it was observed that, in the neighbourhood of Wolverhampton, the overseers are governed by the information given by the owners when the pits are ready for working—whereas, at Bilston, the overseers, it seems, act on their own view of the state of preparation, and the result of their inquiries, instead of relying on the information of owners. The case was adjourned for a fortnight.—*Wolverhampton Chronicle.*

**LAUNCH OF AN IRON STEAMER AT HATLEY.**—On Friday last, the large iron steam-boat was launched from the yard of Messrs. Harvey and Co. She is intended for conveying general merchandise on the Rhine, and is 190 ft. long at the water line, and 200 on deck; her breadth of beam is 23 ft.; and extreme breadth, outside the paddle boxes, 46½ ft.; depth of hold, 11½ ft. She is being fitted with engines of 200-horse power, on the expansive principle, having two boilers, one at either end of the engine-room. Her draft of water at present is 2 ft. 9 in.; and when equipped for sea, with 150 tons of coals on board, will not draw more than 4 ft. of water. She is intended, principally, for towing, and will easily manage 1000 tons. The superior workmanship in every department of this vessel, is very apparent, and reflects high credit on all concerned.—*Penzance Journal.*

## AMENDMENT OF THE PATENT LAWS—No. III.

BY F. W. GAMP.

It is a statement frequently made, “that a profitable patent is sure to be infringed;” and notwithstanding the recent attempts of some would-be patent jurists, to prove the fallacy of the observation, it is still, unfortunately not entirely without foundation in fact, although the exact scope and meaning of the remark are seldom, if ever, correctly stated. By most persons the existence of such an evil as the frequent recurrence of patent litigation, while it is exaggerated as to amount and duration, is erroneously regarded as the natural and inevitable result of the “defective patent laws”—it being unknown to them, or totally lost sight of, that the evil is as much (nay, more) the result of the doings of patentees themselves: it being incontestable that the failure at law of so many patents, in consequence of defects, both legal and technical, in their specifications—documents prepared under the direction and instructions of the patentees themselves—has not only afforded encouragement to pirates and infringers to pursue their nefarious practices, but has induced such a laxity in the commercial notions regarding patent rights, that it is no uncommon thing to find men of high standing in the commercial world, not merely viewing the violation of them as no breach of duty or citizenship, but looking upon the successful issue of such practices with such feelings as Le Sage's *Don Ignacio de Espinosa* entertained, regarding the pillage of authors; and, instead of being abashed at detection, are ready to exclaim with him, “*Furto letamur in ipso*”—the theft is glorious to them. Indeed, were it proper to present names before the public, it would not be difficult to prove cases in which the rights of patentees have been stoutly resisted until the specifications were found to be *bona fide* and valid, when the facility of litigation has been acknowledged, and the authority of the letters patent succumbed to—thus showing that the specification was considered the main point of attack. In my own experience, I remember the case of a gentleman, whose name has several times graced the patent list, bringing forward an invention of the greatest merit, and commencing a treaty with a firm at Birmingham of some renown, who entertained his project so far, that there seemed nothing further to be done but to prepare the documents for completing the bargain; however, the next time they had an interview, instead of its proving a final and completing one, he was met with an answer to this effect—“We have been reconsidering the matter, Mr. B.; and, as the thousands you ask form a large sum of money, we shall do nothing until you have enrolled your specification; and then, if we find it is such that we can work the invention without your leave, why we would rather do it than pay such a sum of money.” This is not mentioned to point invidiously at any particular person, or class of persons, but merely as an illustration of a not uncommon policy as regards the rights of inventors. The importance attached to the specification cannot be condemned, either as an abstract idea, or as a perception of the law of the case, when it is considered that the temporary monopoly secured by letters patent is a bargain between the inventor and the public, whereby he, in consideration of such monopoly, agrees to put them in possession of his secret in the most full and ample manner; to ensure which, he is required to deposit amongst the public archives a document, setting forth the full particulars of the invention in such manner, that an intelligent artisan may, from his description, at once operate with the invention, when the patent right has expired—thus ensuring to the country the full enjoyment of the patented invention hereafter. Of course, if the specification be defective in any of these particulars, the considerations upon which the patent was granted, are not properly complied with, and the bargain may be justly considered determined. I may remark, *en passant*, that one reason for the occurrence of defective specifications is, the intrusion into the profession of patent solicitor, or agent of parties, who are anything but properly qualified for the exercise of it—a profession, requiring the scientific knowledge of a practical engineer and chemist, combined with that of a legal practitioner; and it would certainly go far to diminish the number of invalid specifications and patents, if the profession of patent agent were subject to some such regulations as exist, with regard to the admission of attorneys and solicitors; though it must be allowed this would not prove a complete panacea, as another equally fruitful source of the evil has been the preparation of these documents by patentees themselves, without professional guidance.

Notwithstanding the baneful influence of a badly-drawn specification, and its injurious effects upon patent rights, it is not the only thing affecting them. It is essentially necessary to the validity of a patent, that the invention be entirely novel—that the patentee be the original inventor of the subject matter thereof—and that it shall have never before been subject to publication, sale, or use.—(*Vide* Terms of Letters Patent, and the Statute of Monopolies.) These requirements have been so strictly enforced at law, that it is held that the exposure for sale, or sale, of one subsequently patented article, even by the patentee himself, before the date of the patent, is sufficient to invalidate the grant.—(*Vide* case of Wood v. Zimmer, &c.) It is also to be observed, that if the invention should not have been in use at the date of the patent, but can be proved not to have originated with the patentee, by the evidence of some musty old tome, dragged forth from his kindred dust, wherein a similar thing, although not identical, is set forth and described, in that case the patent right falls to the ground. Although so strict in regard to what has been done “within these realms,” the law becomes latitudinarian when dealing with the proceedings of foreigners. An invention may, at the moment of granting the British letters patent, be notoriously in every-day use in France; and yet such letters patent, although secured by a party who is not the original inventor, as a “communication from abroad,” provided the subject matter is for the first time published here, will be as maintainable as the patent for the most original invention. The policy of this is not to be controverted; but, at the same time, it must be said, with all due submission, that there is sufficient analogy to place in the same category the cases of the introducer of an invention already used abroad, and the restorer of an idea merely promulgated some century since (and not acted upon, at all events, at the time of granting the patent)—one who, by his own ingenuity and intelligence, has developed a discovery, not merely imported it from abroad, that shall effect a beneficial revolution in the arts, which, after collating the best evidence he can attain, appears entirely new; but, hereafter, turns out to have been used by some parties who kept it as secret as possible, but still made use and sale thereof. It may be objected, that, if great strictness were not exercised on the score of novelty, we should be speedily inundated by a host of repatented inventions; and the apprehension is by no means groundless, as we find this occurs not unfrequently even now—but no more encouragement than at present exists would be given to plagiarism by allowing any *bona fide*, but unfortunate, inventor the full benefit of a statute already in existence—Lord Brougham's Patent Law Amendment Act—which provides that, in the cases above referred to, upon petition to the judicial committee of the Privy Council, and proof being adduced, that such patentee believed himself to be the first and original inventor; and being satisfied that such invention, or part thereof, had not been publicly and generally used before the date of such “patent,” should receive confirmation thereof. This clause of the Act has hitherto received such a narrow interpretation by their lordships, that it has taken no wider range than may be, and was before, attained by the operation of the common law. The Council has only confirmed in cases where the previous use, or publication, has been so slight, that it is almost a miracle the fact ever came to light.

Such a provision as this in its fullest extent must, it is true, be worked out with great circumspection, that its benefits be not extended to those who do not belong to the highly-meritorious class of inventors, but rather to that of public plunderers; but that it is greatly needed, men of experience will not be loth to testify; and even to others, a very slight consideration will soon render this apparent, when it is known, that valuable inventions, which have been secured to parties by patent, they being truthfully impressed with the idea, that such inventions originated with them, which idea was strengthened to the fullest extent by the results of inquiries amongst the practitioners of the art improved; but have been found, in many respects, set forth in some ancient work, or, perhaps, in the specification of a very old patent. This last may seem the effect of negligence on part of the patentee—but it is not so; for, to prosecute a search for all patents, relating to certain things—for instance, steam-engines—may be compared to one of the labours of Hercules; or, to use the exaggerated statement of a jocosse friend, “Would take 40 men 40 years, and an expenditure of 40,000 l., to completely effect the object.” But, in sober truth, in very many cases, it is so serious, that it is found much better worth while to risk the point, than to incur so much trouble and expense; and this cannot be altogether done away, because the yearly accumulation is so great, that the most efficient arrangements will not enable us to obtain full and correct information, without a serious inroad upon time and pocket.

Patent-office, 210 Strand, August 30.



## Original Correspondence.

## IMPROVEMENTS IN SMELTING.

SIR.—The reasons alleged by the copper smelters for their indifference towards the abatement of the nuisance resulting from the imperfect method at present employed in their works, and for the non-adoption of a superior plan of calcination, are—that no nuisance exists; that if the copper smoke admits of being so styled, the inhabitants have no just ground of complaint—it having been in existence prior to the period at which they located themselves within its limits; and, on the supposition of it being injurious, they have endeavoured to remedy it by lengthening the flues—the vapours now being dissipated at an altitude, that prevents them exercising any hurtful influence; and, finally, that the collection of the sulphur would, by its abundance, so greatly depreciate the value of that article, as to render it comparatively worthless. To assure ourselves of the existence of a nuisance, we have only to inquire into the nature and composition of the substances evolved from the furnaces. They consist of sulphurous, sulphuric, and arsenious acids, fluorine vapours, and small quantities of metallic compounds, which latter are carried upward by the draught. The whole of these in their concentrated state are totally irrespirable, and highly destructive to animal life; and even in a more divided form, when considerably diluted by admixture with the atmosphere, exert a marked injurious effect over the health and development of those who are unfortunately placed within their influence; and, from the magnitude of the operations at Swansea, we may learn to what an enormous extent this evil exists. We are hardly prepared to believe that a reply, fraught with so much injustice—such utter disregard for the health of their neighbours, as “that they had no just grounds of complaint, the nuisance having been in existence previous to the time when they settled within its limits”—could have emanated from so enlightened and influential a body as the copper smelters, or that they could have exhibited such an absence of philanthropy to the large amount of local disease and suffering which was caused by their adherence to a process that was attended with such baneful consequences. But the complaints of the inhabitants were too strongly supported by justice to be entirely neglected; and the smelters perceived that it was necessary to take some steps towards its alleviation—from whence arose that celebrated investigation of the copper smoke nuisance, whose mighty labours gave birth to such barren results—the details of which are so well known as to render recapitulation unnecessary. Thus, were the sufferers cajoled out of their ardently-sought-for redress; the parties from whence the relief should have sprung proved themselves incapable of affording it, or were so blindly prejudiced to the present mode, as to render any change hopeless. The nuisance still remained unabated—the sulphurous and fluorine vapours were still allowed to revel onward in undisturbed freedom—to pollute the atmosphere of a place that otherwise enjoyed considerable salubrity—to wage war with mankind, because it suited the interest of some two dozen prejudiced individuals.

The miserable subterfuges by which they avoid every attempt of improvement clearly establishes the weakness and instability of their position. Can anything be more puerile and fallacious than that the production of an increased supply of sulphur would so far reduce the value of that article as to render its manufacture unprofitable? If we turn to some of the manufactures which have risen, or increased in importance, within the last few years, we readily perceive on what a feeble basis their objection rests. The introduction of heated air in the smelting of iron abridged the labour, and lessened the quantity of fuel, necessary to produce a ton of pig-iron, which produced a corresponding decrease in its value; this diminution did not, however, destroy the manufacture, or render its continuance unprofitable—it increased the consumption, and placed the manufacture on a surer and more profitable foundation. Again, the improvements which, from time to time, have taken place in the manufacture of sulphuric acid, have greatly augmented its productiveness, and thus, also, caused a reduction in the price; but the consumption has risen in proportion. The greater absence of waste, decreased labour, and capital employed in its production, substitution of materials, &c., which the improvements brought with them, have effected this change in its value. The numerous applications of which sulphuric acid is susceptible in the arts and manufactures render it an object of the highest importance that its price should be brought to the lowest possible minimum; and, indeed, the large share of attention which has been paid to the perfecting of this extremely beautiful process has left little to be desired but, in the production of raw sulphur, a better and cheaper method of obtaining it from our own mines—much remains to be done towards the attainment of so desirable an object. Copper and iron pyrites—which exist so abundantly in this country—offer an inexhaustible source from whence a supply of sulphur may be obtained; and, though the latter mineral is employed in the production of sulphuric acid, the expense of carriage forms such a serious drawback to its general adoption, that it still remains for the manufacturer, and those interested in mines of this mineral, to adopt some means to separate the sulphur at the mine, and avoid this heavy expense. This end may be accomplished, as I stated in a former letter, by the employment of Rogers's patent for separating sulphur from mineral substances—which, from the simplicity of the process, and perfect separation of sulphur from the ore, offers peculiar advantages; while to the copper-smelter, who has to deal with a mineral highly charged with sulphur—which it is necessary to separate before he can pursue his ulterior operations in the smelting furnace—the readiness with which it can be applied to the present calciners, and the facility with which the sulphur can be collected, present a degree of interest and advantage that is well worthy his consideration.—JOHN HOWSON: Cornhill, Aug. 31.

## RAMBLES THROUGH SOUTH WALES.

SIR.—In my travels through North Wales, I was struck with the beauties of Flintshire, and the activity which must have existed some time ago in manufactories and mining; the former having now fallen into decay, and the latter merely existing, for the want of capital and spirit to develop the remaining riches which it is certain to contain. In looking further into this country, I found a lead mining district, extending from Rhyl to Minera, in a north and south direction, say from 30 to 40 miles in length; through most of which extremely rich mines had been found, and worked—but, at this time, very many of them in a state of ruin. In one instance, I found a mountainous piece of land, showing still the capabilities of the country, in which a great discovery of lead ore has taken place—for instance, the Jamaica Mine, on the channel of limestone, in the grit, through that district, called the Mold Mountain. This mine, I am informed, was opened, some years ago, by a rich mining company; and, after spending a large sum in sinking shafts, &c., they abandoned the workings as being worthless. The mine was afterwards undertaken by a private company—who were respectable, but not rich—in connection with a few of the former or old adventurers; and, after the expenditure of a small sum (less than 200*l.*), the discovery alluded to was made, and has been, for some considerable time past, yielding a return of 100 tons per month, worth 1*l.* per ton, with about 10 men at work on ore, and a fair prospect of opening ground of similar worth by extending and deepening the mine. After this, and several other discoveries made by small companies, after trials by rich and influential ones, should any one be dispirited from mining, even with limited means, provided the spot for trial be selected by scientific men? That the former company's views in the selection were good, must be admitted; but, for want of confidence in their selection, were abandoned; and the work done by them, in furtherance of their intended object, pointing out to others what might be done, has been the source of great wealth to the present company. Mining, the most uncertain of all callings, is still a good one, if properly pursued. In justice to the adventurers and miners of Flintshire, I should say that high royalties are much complained of, and are said to be, in a great measure, the cause of the mines so falling off, from the want of capital and spirit. A TRAVELLER.

## EXPLOSIONS OF STEAM-BOILERS.

SIR.—In most, if not all, of the accidents which have occurred in boilers in this country, it has been proved, or assumed with strong grounds of probability, that it has occurred from the suddenly covering with water parts which had been previously heated to a high degree of temperature, by being left exposed; in which case the most eminent engineers have given their opinion, that the safety valves do not afford a sufficient exit for the escape of the steam or gas (for authorities have been divided as to the nature of the fluid so formed) thus suddenly generated. Without presuming to give a decided opinion upon so serious a question as that involved in the melancholy case of the *Cricket* explosion, I apprehend that it will be

found, that the water had got too low in the boilers; and that, by suddenly pumping up, the heated tubes came in contact with the new supply of water, and thus the sudden generation of steam had created that explosive tendency, or property, to which most, if not all, of these catastrophes have been attributed. It is much to be regretted, that among the great questions which have been mooted in the scientific world, we have not by this time arrived at some more certain knowledge with regard to the nature of these explosions, which appear, from the facts I have already stated, to be in some cases an inevitable, though happily a rare, occurrence in the use of this great prime mover of the age. That upon the investigations which have preceded this catastrophe so much should be left to conjecture, in a country which ranks the first for experiment and analysis, is to be much regretted; and I hope that this accident may not be without its use in directing the energies of the eminent men of that science, of which we are so justly proud, to reducing that to a certainty, which heretofore appears to have been left too much to conjecture.—A READER.

London, Sept. 2.

## WEST CORNWALL RAILWAY.

SIR.—Now that the Hon. Member for Falmouth has become so large a shareholder in the West Cornwall Railway, and is destined to assume the responsible duties of the chair in the board-room, I trust our affairs will be put on a better footing than they have lately stood. The apathy of our late directors to the welfare of the company is wholly unaccountable, as a better paying line, when properly executed, will not be found in England. In support of this opinion, I beg to draw your attention to the facts proved before the Railway Committee, of which Sir Charles Douglas was the chairman:—“The line would pay 10 per cent. profit, allowing 40 per cent. for working expenses. The quantity of copper ore, the produce of the county, sold, from June 30, 1843, to the same date, 1844, was 152,667 tons—of which one-half was sold at Redruth. There was, also, a very large amount of traffic in flour, groceries, and provisions of all kinds, along the whole tract of country to be traversed by the line. The population of Penzance is 9000, and that town is the centre of a Union, containing 50,000 inhabitants, and is the largest market-town west of Bath. About 14,000 or 15,000 tons of timber, from Canada and Sweden, are annually landed at Penzance, and thence distributed to the mining districts. The amount of tonnage that annually comes within shelter of the pier of Penzance is between 44,000 and 45,000 tons. The bay is usually crowded with vessels, whenever the wind blows long from N.N.E., which precludes shipping from making way up either Channel. The West Cornwall Railway would be most advantageous for advancing communication with ships thus wind-bound; and, when the junction shall have been completed with either the broad or narrow gauge at Exeter, the goods traffic, comprising the cargoes of wind-bound ships, would be immense.”—These facts, Mr. Editor, should be constantly kept in view, in order to stimulate the public in urging on the formation of a line from Exeter to Truro direct, or to a junction with the Cornwall line, west of Launceston, as it will be so essential to the welfare, not of the county of Cornwall only, but of the whole kingdom. If our directors are wide awake to their own interest, and that of their shareholders, it appears evident that such a line must be a most profitable investment, especially at the present depreciated price of the shares. To the Cornwall Railway, now in process of formation, it will be as a right hand—a most valuable auxiliary; and to the narrow gauge interest, if the advocates of it design to secure the only adequate remuneration they can obtain for their lines to the west, the West Cornwall Railway will be so pre-eminently essential to them, that they should lose no time in taking steps to secure the possession of it. To the Bristol and Exeter Company, it would seem, through the medium of the Cornwall line, naturally to appertain, as they could reach it by a branch to the town of Launceston, where a most important station could be made, and thence to Double Boys, as projected last year. But, if the South Western Company are really in earnest, in their expressed intention of making a narrow gauge railway to Truro, they should immediately secure all the shares in the market; and then open a negotiation with the directors, for the purchase of their interest; and thus obtain the right to make the line to suit their own convenience, which would be an incalculable advantage to them.

As the prosperity of the county so materially depends on the early formation of a railway through it, I trust, Mr. Editor, you will exert your powerful pen in advocating a vigorous and determined effort to secure a bill for that purpose in the ensuing session. Too much money has, unfortunately, been already spent in ill-directed endeavours to obtain a line—which have mainly failed through the cupidity of the lawyers, and the unwise opposition of the landlords; they should, therefore, lay their plans, this time, with a greater regard to economy, and prosecute them with greater accuracy and vigour.

## ATMOSPHERIC RAILWAYS.

SIR.—It appears to me that your correspondent, Mr. J. White, is a little in error in some of his calculations on atmospheric railways: he states that the power requisite to rarely an atmospheric tube from 0 to 15 in., and from 15 to 22 in., is the same; and that, in working at 22 in., 25 per cent. more power is lost than by working at 15 in. Does Mr. White suppose that 30 in. should be obtained with double the amount of power that would produce 15 in.? It appears that he does; for he considers that, because as much power (as he states) is requisite to obtain the last 7 in. as it takes to produce the first 15 inches, one-half of this power is lost. I will endeavour to show, as briefly as I can, that these calculations, or conclusions, are erroneous; and that there is no loss of power (friction excepted) at any degree of rarefaction, provided the apparatus is perfect (Clarke and Varley's is nearly so), and the pumps act directly on the tube; and, perhaps, we shall obtain a clearer perception of the principle by supposing the tube itself to form the air-pumps, and let it be (say) 15 yards long; let a piston, worked by the prime mover, be placed at one end of this tube, and the train piston at the other; let  $\frac{1}{4}$ th of the air be extracted at one stroke, the power requisite would be little more than  $\frac{1}{4}$  lb. per inch, and two inches of mercury would result; but the same amount of power will not produce 2 in. more—if it would, we should obtain a vacuum with 7.5 lbs. Again, let half the air be extracted at one stroke, the power requisite will be 4.5 lbs. per inch; the pressure in front of the piston will be uniformly 15 lbs., and behind it, it will vary from 15 lbs. at the commencement to 7.5 lbs., at the end of the stroke it will average 10.5—so that the difference of pressure will be 4.5 lbs. against the piston. Again, let half of the remaining half be extracted, at one stroke the power necessary will be 7.5 lbs.; the pressure in front of the piston will vary from 7.5 lbs. at the commencement to 15 lbs. at the end of the stroke it will average 5.25 lbs., which, deducted from 12.75, leaves 7.5 lbs. as the difference of pressure against the piston. By the first stroke, 15 in. of mercury is obtained, with 4.5 lbs. per in.; and, by the second stroke, only 7.5 in. more, with 7.5 lbs. per in. This, certainly, is not “the same”; if the mercury was raised in the same proportion by the second stroke as by the first, we should have 40 in. for 45 : 15 :: 7.5 : 25 = 40. But as that is 10 in. beyond a vacuum, no one can expect to obtain it; nor need they suppose that “this fact clearly demonstrates” that there is any loss of power by the higher degree of rarefaction; for if, after the first of these two strokes, the train piston was put in motion, it would be driven half the length of the tube, with an average force of 4.5 lbs. per in.; but, if put in motion after the second stroke, it would be driven three-fourths of the length of the tube, with an average force of 8 lbs. per in.—so that no loss of power is sustained by a high degree of rarefaction. I may just observe, that whether the tube is rarefied with one or 100 strokes of the engine, the power will be the same. A locomotive line of railway has an advantage over an atmospheric one, with regard to first expense; but the cost of working will be, at least, ten to one in favour of the latter, and it is also infinitely safer.—JOHN WESTON: Portland Town, Sept. 1.

IRRIGATING MACHINES IN EGYPT.—The machine used for irrigation, so frequently erected on the banks of the Nile, must excite curiosity. It is composed of a vertical wheel, round which are fastened two parallel cords, reaching a little below the surface of the stream; to these are attached, at equal distances, earthen pots, which fill successively by dipping into the water as the wheel revolves, discharging their contents, when raised to the highest point, into a trough, from which the fluid is carried by a trench into the intended locality. But, in order to set this wheel in motion, a small vertical wheel, with cogs, is fastened to the opposite end of the same axis, it being from 6 to 8 feet in length, and in a horizontal position; with it is a third and larger cogged wheel, which, being turned by oxen or cows, sets the two first in motion. At spots more remote, spacious pits are dug to receive the water, whence it is drawn up by a simple machine formed of two upright posts with a horizontal bar between them, to which is affixed a lengthy lever, having a vessel at its smaller extremity; this being filled by lowering and raising the pole, then discharges itself into a trough placed for the purpose.

## Proceedings of Public Companies.

## MEETINGS DURING THE ENSUING WEEK.

THIS DAY ..... Great North of India Railway—London Tavern, at One.  
TUESDAY ..... Falmouth Water-Works Company—offices, at One.  
THURSDAY ..... Coombe Valley Quarry Company—Coggeshall, Essex, at One o'clock.  
SATURDAY ..... Belgian Eastern Junction Railway—London Tavern, Twelve for One.  
(The meetings of Mining Companies are inserted among the Mining Intelligence.)

## SWANSEA DOCK COMPANY.

The first ordinary meeting of shareholders was held at the Guildhall Coffee-house, on Tuesday, the 31st August.

CAPTAIN MORGAN (chairman of the board of directors), in the chair.

The SECRETARY (Mr. Francis) having read the advertisement calling the meeting, the CHAIRMAN affixed the seal to the registry of proprietors.

The SECRETARY (Mr. Francis) read the report as follows:—

REPORT.  
Your directors have much pleasure in meeting the shareholders at this their first general meeting, and in congratulating them upon the success which has attended their long continued efforts to obtain an Act of Incorporation for the construction of docks, so important an adjunct to the rising prosperity of the town and port of Swansea—thereby securing to it the advantages held out by the progress of the times, and meeting the requirements of its present and rapidly increasing trade. A considerable amount of capital is already invested by resident merchants in first-class shipping, trading between Swansea, America, Cuba, Australia, and Canada, which, there is no doubt, would be greatly increased as soon as those docks are ready to accommodate them, for it is well known that sharp vessels, whose owners object to their taking the ground, cannot be chartered to Swansea. The consequence is, that much, indeed, of the bulk of the foreign produce destined for Swansea and its populous interior, is shipped in the first place to London, Liverpool, Bristol, and other ports possessing floating accommodation, and afterwards transhipped to Swansea at great cost and loss of time. It is, therefore, obvious that these docks will of necessity and very soon induce a large additional trade—for it will be as easy to load home sugars as copper ore, tea as minerals, and dye woods, or wool, or other produce. The harbour, from its situation at the mouth of the Bristol Channel, is peculiarly applicable to the commercial requirements of the great mineral basin of South Wales, local alone, giving it an incalculable advantage over every other port in the channel. It is of easy approach, the navigation from the Atlantic being direct and without risk, whilst its entire neighbourhood is rich in mines of bituminous coal-burning and steam-rocket coal, as well as iron ore and anthracite. Your directors have pleasure in pointing to those great feeders of docks, the railways; that truly national line, the South Wales, is in rapid progress; the Vale of Neath has been commenced, and the Cameron Lougher Railway is forthwith to be laid down. Swansea will thus be placed in immediate and direct connection with the great commercial centres of the world, and will be able to compete with all the despatch that is compatible with propriety. Your directors have succeeded in obtaining from the Legislature a valuable clause, sanctioning the use of the outer basin, and in the levying of tolls for goods shipped or unshipped therein, as soon as it is available. No time has been lost since your directors have acted under the powers of the Act in making arrangements for obtaining the interest in the lands required for the company's works, and they have the gratification in stating that they have availed themselves of a most liberal offer from Mr. L. Dillwyn, of Llanidloes, of the best and most important pieces of land necessary to the docks. Your directors were most anxious to have laid a statement of the liabilities of the company before the meeting; but from the very short period which had elapsed since the passing of the Act, and the difficulty of obtaining the professional and other bills, they have been compelled to delay this to a future day. The liquidation of the outstanding accounts will have their best and prompt attention, while due energy will be exercised to obtain the lands, and to make everything subservient to the rapid progress of this most important undertaking.

The CHAIRMAN moved, that the report be received, adopted, printed, and circulated amongst the shareholders.—MR. JENKINS seconded the motion.

Col. CAMERON said, he was entitled to speak on this subject from being deputy-chairman of the company, and having acted, in conjunction with the London board, almost from the commencement of the undertaking. He was sorry to say, that it appeared to him that they could not progress in that prudent and reasonable manner which he had hoped for from the two boards acting conjointly, amicably, and beneficially, for the interests of this company. He stated this advisedly, and not from a wish to throw any difficulties in the way of carrying out the objects of the company, for he had no doubt of its being a good speculation. Having been an inhabitant of Swansea for the last 30 years, and always taken great interest in the prosperity of that place, more than any other individual—he repeated the words, more than any other individual—(hear, hear)—they might conclude that his object was not to do anything detrimental to Swansea. He had daily attended to his duties as a magistrate there for two years without any profit—and, as the Mayor, had established a daily coal delivery—therefore, in anything he might say, he hoped he should not be charged with mercenary views. As far as this company was concerned, and in his capacity as deputy-chairman, he could also say, that he had no wish for emolument in any shape.—(The gallant Colonel then read several letters; and maintained that the London board had been deprived of the means of co-operating in the report just read to the meeting. Besides which, a bye-law had been passed by the Swansea board, which was so important, that it ought to have been advertised in the report read to the meeting.)

The CHAIRMAN observed, that the subject before the meeting was the adoption of the report.

Col. CAMERON: I am giving my reasons why it should not be adopted.

MR. JENKINS (the country solicitor) said, that the question of the bye-law did not come within the resolution before the meeting.

A PROPRIETOR thought it ought to be considered before adopting the report.

The CHAIRMAN said, Mr. Jenkins would, perhaps, have the kindness to explain, as the legal adviser, what subjects ought to be discussed at this meeting by the Act?—MR. JENKINS replied, that no other matters than those in the resolutions could be discussed at any meeting, except special notice was given by advertisement.

Col. CAMERON said, as he saw a disposition to stop inquiry, he would at once say that the report presented was not the report of the board of directors; for there were six London directors then present, and he, as deputy-chairman, would declare that they never had read that report. (Hear.)

The SECRETARY signified that, at the meeting of the whole body of directors in London, it was determined that the report for this meeting should be drawn up by Capt. Morgan in Swansea; and that it was afterwards sent, with a letter, to the London gentlemen.

Col. CAMERON: Yes; and it was ordered to be returned without comment.

The SECRETARY said, they might have added to or diminished therefrom, as a fair draft was made of it for this meeting. He told Mr. Howden that he was very anxious to have this report, and yet nothing had been done with it in London. This report, at all events, was drawn up with the sanction of all the directors at Swansea.—The CHAIRMAN observed, that the report was never sent back by Mr. Howden.—MR. JENKINS said the responsibility rested on one or all of the London board, in not sending back this report.

MR. HOWDEN (the London secretary) explained. He said, Mr. Francis's letter contained, also, an extract of a set of bye-laws, agreed to at a special meeting in Swansea—in the 11th of which it was stated, that, in case of the monthly meetings of the board assembling in London requiring adjournment, all such adjourned meetings should be held at Swansea. (Hear, hear.) On the receipt of this, he felt his hands tied, and could not decide whether it was legal or illegal for the London directors to meet. They said, “We cannot look at this report as long as that bye-law exists, which does away with the power of the directors in London.” It was, therefore, considered that this report was only that of a meeting of directors in Swansea, who had deprived the London gentlemen of the liberty of meeting to give it any consideration—so that it was laid on the table.—The CHAIRMAN: Not at all.

A PROPRIETOR said, that was the reason why the report was not sent back, or remained without alteration. (Hear, hear.)

Col. CAMERON declared, that the London board never thought of hearing of a resolution of that sort—one which was in opposition to the act which regulated all their proceedings. (Hear, hear.) He had every confidence in the London gentlemen; and supported them under these circumstances, although he had been most of his life in Swansea. (Hear, hear.) This was a reason for his opposing the reception of the report.

MR. JENKINS (a barrister) considered Col. Cameron was not in order in speaking on a subject not before the meeting.

The Rev. Mr. SHERRIN said, it was the reason why the report was overlooked in London.—MR. JENKINS contended that there must be something in the face of that report, and that only to lead to a discussion. (Hear.)

A PROPRIETOR: It is brought here as the report of the directors, whilst six of the whole number say, “We have not examined it.” (Hear.)

The CHAIRMAN did not take that view of the subject. The report was in London for a fortnight.—A PROPRIETOR: The fault is this bye-law.

Col. CAMERON thought the CHAIRMAN was quite as wrong as his legal adviser. (Order.) The CHAIRMAN: I have nothing to do with Mr. Jenkins as my legal adviser. He is merely here as a shareholder.

Col. CAMERON said, his only object was to show that this report ought not to be adopted, as not being the report of the directors of this company.

The CHAIRMAN: It was of ten of them. (Hear, hear.)

Col. CAMERON: Not of a meeting convened in the proper way.

MR. HOWDEN said, he had no recollection of any notice of that meeting; and added, that the Colonel had requested him to summon a meeting in London, for this day, of the Swansea directors in London, to consider the terms of the report—and he had done so; but they did not attend.

Col. CAMERON said, the object of that bye-law was to do away with the London board; and he felt it his duty, even against his friends in Swansea, to resist it. (Hear, hear.) He had received a letter from the secretary as to a meeting for framing of that bye-law, but had entered his protest against it.

Capt. NONCOTT stated that he had not received a letter.—Capt. EARLE stated the same.

MR. ELDERTON (the London solicitor to the company) apologised for intru-







**STRONG MIXING PIG-IRON.**—The YSTALYFERA IRON COMPANY beg to solicit ORDERS for their ANTHRACITE PIG-IRON. This iron mixes well with Scotch pig—imparting to it strength and elasticity, and receiving from it a portion of its softness and fluidity. No. 3 pig is recommended for mixing with soft iron—Nos. 1 and 2, for machinery castings, requiring great soundness and strength. At this period, when cast-iron is so much employed in the construction of bridges and other buildings, requiring all the strength and elasticity which the best mixture of metal will afford, it may be interesting to call attention to the characteristics of ANTHRACITE PIG-IRON, as reported on by that great practical authority, the late DAVID MURPHY, Esq., M.I.C.E.:

"It greatly exceeds, in strength, in defective powers, and capacity to resist impact, any iron at this time manufactured in the United Kingdom."  
"It now only remains for me to mention a property peculiar to this iron, which was noticed at the time I made the trial experiments, four years ago, but which has been more fully developed in those more recently made. The property referred to is one of great springiness, or elasticity, which communicates a tendency to the bar, in deflecting and breaking, to resume its rectangular form. Bars that had obtained a permanent set of 2-10ths, when afterwards broken, presented but a slight deviation from a right line; and in no case, did the curvature exceed one-fourth of a tenth."  
"It was also remarked, that most of the fractures, in breaking, presented a regularity of grain throughout, resembling the structure of unhardened steel."

Address THE YSTALYFERA IRON COMPANY,  
Dated June 22, 1847. Near NEATH, SOUTH WALES.

**HOT-BLAST WITHOUT COAL, LABOUR, OR REPAIRS.**  
DIXON AND BUDD'S PATENTS.  
Apply for particulars, or to inspect the process in operation on six blast-furnaces, to J. Palmer Budd, Esq., Ystalyfera Iron-Works, near Neath.  
Dated June 22, 1847.

**BRISTOL AND EXETER RAILWAY.**—At the Half-yearly General Meeting of this company, held at the White Lion Hotel, in the city of Bristol, on Wednesday, the 1st of September, 1847.

JAMES WENTWORTH BULLER, Esq., in the chair.  
It was unanimously resolved,—  
1. That the report of the directors, now read, be received and adopted, and that they be requested to send a copy to every proprietor.  
2. That a dividend of £1 13s. 9d. per £100 share, free of income tax, for the half-year ending on the 30th of June last, be declared, payable to the proprietors of all such shares standing registered on the 21st of August.  
3. That the directors be, and they are hereby fully, authorised to order surveys, and to adopt all such other proceedings as they may deem expedient for protecting the interest of this company, in any of the districts contiguous to the main line or its branches.  
4. That this meeting approve the purchase of Exeter and Crediton shares for account of this company, as stated in the report of the directors; and that they be, and they are hereby fully, authorised to adopt such measures as they may deem expedient for securing possession of the Exeter and Crediton Railway, conformably to the agreements already sanctioned by this company.  
5. That the purchase of the Glastonbury Canal and works, for account of this company, be, and the same is, approved and sanctioned by this meeting; and that the directors be authorised to adopt whatever measures they may deem needful for legalising this transaction.  
6. That the directors be, and they are hereby, authorised to create new shares, or raise loans, under the guarantee of this company, and in conformity with the several Acts of Parliament, when and in such way as they may deem most advantageous to the interests of this company, for the purpose of providing the several amounts subscribed towards the capitals of the South Devon and Cornwall Railways; and for such other purposes as have been sanctioned by the proprietors of this company.  
7. That the best thanks of this meeting be given to the directors, for their able and efficient management of the affairs of this company.  
JAMES WENTWORTH BULLER, Chairman.  
The chairman having quitted the chair, it was unanimously resolved,—  
8. That the best thanks of this meeting be given to James Wentworth Buller, Esq., for his able and judicious conduct in the chair.

**CALEDONIAN RAILWAY—NINTH INSTALMENT.**  
Notice is hereby given, that the directors of the CALEDONIAN RAILWAY COMPANY have made a CALL for an instalment of TEN POUNDS per share, being the ninth and final instalment, PAYABLE into one of the undermentioned banks, on or before Friday, the 1st of October next:—

LONDON.—Messrs. Masterman and Co., 35, Nicholas-lane, Lombard-street.  
LIVERPOOL.—Messrs. Moss and Co.  
MANCHESTER.—Sir Benjamin Thompson, Bart., and Co.  
BRISTOL.—The National Provincial Bank of England.  
NEWCASTLE-ON-TYNE.—The Newcastle Commercial Banking Company.  
EDINBURGH AND GLASGOW.—The Commercial Bank of Scotland.  
Interest, at the rate of 5 per cent. per annum, will be charged on all calls not paid at that date.—No transfer of shares received at this office after the 7th inst., can be registered until the call is paid.  
J. W. CODDINGTON, Secretary.  
Office, 122, Princes-street, Edinburgh, Sept. 1, 1847.

**CALEDONIAN RAILWAY.**—At the Half-yearly General Meeting of the Caledonian Railway Company, held in the Royal Hotel, Edinburgh, on Tuesday, 31st August, 1847.

J. J. HOPE JOHNSTONE, of Amandale, Esq., Chairman of the Company, in the chair.  
The Secretary having read the advertisement calling the meeting, the following resolutions were passed unanimously:—  
1. That the common seal of the company be affixed to the register of shareholders (which was accordingly done, in the presence of the meeting).  
2. That the report of the directors now read be received, adopted, and circulated among the shareholders.  
3. That John James Hope Johnstone, Esq.; William Lockhart, Esq., M.P.; Robert Johnstone Douglas, Esq.; James Seton Wightman, Esq.; and the Right Honourable Fox Maule, M.P., be re-elected directors of this company.  
4. That Henry Brock, Esq., be re-elected one of the auditors.  
It was moved by Sir Andrew Agnew, Bart., and seconded by John Melkell, Esq.:—"That there be a total cessation of traffic on this railway on the Lord's Day," and on the question being put, the motion was negatived.  
J. J. HOPE JOHNSTONE, Chairman.  
The chairman having left the chair, it was further moved, by Sir Andrew Agnew, Bart., and carried by acclamation:—  
That the thanks of the meeting be given to the chairman, for his conduct in the chair.  
J. W. CODDINGTON, Secretary.

**CAMERON'S COALBROOK STEAM COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.**  
CONTRACT FOR WORKS.

The directors of the above company are prepared to RECEIVE TENDERS for the ERECTION of a QUAY WALL at their wharf, situated next Padley's Quay, Swansea. Plans and specifications may be seen at the offices of J. Jackson Price, Esq., solicitor, Swansea, from Monday, the 30th August, till Saturday, the 11th September next, both inclusive.  
Sealed tenders to be addressed to the secretary, must be delivered at the company's offices here, not later than Twelve o'clock on Monday, the 13th September next. The directors do not pledge themselves to accept the lowest tender.  
By order of the directors,  
London, 2 Moorgate-street, August 24, 1847. A. C. HOWDEN, Secretary.

**CAMERON'S COALBROOK STEAM COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.**  
CONTRACT FOR WORKS.

The directors of the SWANSEA AND LOUGHOR RAILWAY COMPANY are prepared to RECEIVE TENDERS for the ERECTION of their LINE of RAILWAY. Plans and specifications may be seen, and forms of tender obtained, at the office of T. Esq., the company's engineer, Thames Embankment office, 2, Middle Scotland-yard, Whitehall, London, between Monday, the 30th August, and Friday, 3d September, both inclusive; and at the offices of John Jackson Price, Esq., solicitor, Swansea, from Monday, the 6th, till Saturday, the 11th September next, both inclusive.  
Sealed tenders, addressed to the secretary, must be delivered at the company's offices here, not later than Twelve o'clock on Monday, the 13th September next. The directors do not pledge themselves to accept the lowest tender.  
By order of the directors,  
London, 2 Moorgate-street, August 24, 1847. A. C. HOWDEN, Secretary.

**CORNWALL RAILWAY.**—At the Half-yearly Ordinary Meeting of the proprietors of this company, held pursuant to advertisement, at the Assembly Room, Truro, on Thursday, August 26, 1847.

JOSEPH THOMAS TREFFRY, Esq. (Chairman), in the chair.  
The following resolutions were put from the chair, and carried unanimously:—  
1. That the common seal of the company be affixed to the register of shareholders, now produced.  
2. That the report of the directors, now read, be adopted and circulated among the proprietors.  
It was resolved,—  
That the best thanks of the meeting be given to the chairman for the courteous manner in which he has presided over this meeting.  
W. H. BOND, Secretary.

A new engine of Mr. Crampton's, the *Kennard*, for the Dundee and Perth Railway, steamed from Whitehaven to Hull last week in a most satisfactory manner. It was seen by most of the engineers of the various lines passed over, and there appears to be but one opinion upon the subject—that it is perfectly successful: it was particularly so in passing over the Manchester and Sheffield line, where the curves are very severe.

**NEW LIFE-BOAT.**—A new life-boat, of capabilities and safety never before obtained, was tried at Cowes on Tuesday last, in the presence of Captain Thornton, R.N.; Capt. Nairne, Hon. Company's Service; and Mr. J. Allan, director of the Peninsular and Oriental Steam Navigation Company, for which company she was built; of Capt. Sparkes, superintendent; Capt. Lewis, Captain Moreby, Mr. A. Lamb, and Mr. G. Bayley, the company's principal officers, all of whom gave it their strongest approval. The boat was built by Messrs. White and Sons, is 30 ft. long, 9 ft. beam, has double sides and air-tight ends; 135 men were placed in her, and she took in all the water that she could gale under; and when she righted, gave a 15-inch side—in fact, it was found impossible to sink her. She sails very fast, stays in 32 seconds, and weighs only 17 cwt. She will carry in her lockers a month's provision for 50 men. The novelty is principally in her form. A more public trial is to be made at Southampton, on Monday.

**GALVANIZED TINNED IRON.**—Plates prepared under this process have been successfully used in roofing the Merchants' Exchange, the Boston Exchange, the Franklin House, the New York Post-office, and Stewart's marble store in Broadway. About 700 other buildings have been covered with these plates; in all these instances, it has been found that they remain in as good condition as when first laid on, are bright, sound, uncorroded, and tight. The article is easily worked, from its malleability, and the quality of the iron is much improved by the process. We recommend it to our readers as something well worth their attention.—*Miners' Journal.*

**GENERAL MINING MART AND CLUB HOUSE,**  
LONDON.

The MINERAL PRODUCTIONS OF THE WORLD are computed to be of the annual value of upwards of £44,000,000—one-half of which is raised in Europe alone. But facts regarding mining and geology, with the most approved modes of analysing and profitably separating mineral products—the results of practical experience—have no common concentration or abiding place; nor have mining results, varying, as they confessedly do, with the variations of the strata, any acknowledged repository beyond the shelves of a few provincial institutions.

LONDON—the focus of business appertaining to the empire and the world—the seat of most mining companies, and where almost all of them receive support and encouragement—has no public institution—no *focus studii*—to which the shareholder, the agent, the inventor, the practical miner, or the possessor of valuable mineral property, can have access, to either to afford or obtain information.

It is proposed, therefore, to form an institution in London, to be called—  
"THE GENERAL MINING MART AND CLUB HOUSE,"

accessible to members on payment of £4 4s. per annum. From and after Christmas next, an entrance fee of One Guinea will be required beyond the subscription.

The advantages to be derived from the institution will be these:—  
The letters of every member will be received there, and his address in London always known to his family and other correspondents.

He will have a place to transact his business, make and keep his appointments, write his letters and post them; and, for these purposes, there will be private boxes, as well as public rooms.

There will be all the mining and leading journals of the day, with such other interesting publications as shall be decided on.

The refreshments will be charged at little more than cost price—being a saving of full 25 per cent.—and no fees will be payable to servants. Every facility afforded for going to and from the railway trains, and for visiting places of business and amusement in London.

In fine, this institution will afford to the member, as soon as he reaches London, the means of finding himself in the society of his friends, or others of congenial taste, with all the ease, but less expense, of an inn. It will be open to one and all of its members, combining all the conveniences of a club, but independent of all political, party, national, or local feelings.

For mining business appropriate rooms will be set apart, and every facility afforded in the formation and extension of mining companies—the conduct of their business—the holding their annual or other meetings, and the sale and purchase of shares. The charges for these will be on a regulated and moderate scale, and will only concern those who shall desire the transaction of such business.

No responsibility of any kind is to be incurred by the member beyond the amount of his annual subscription, and his name may at any time be given half-a-year's notice, and paying up his subscription to the proposed time of quitting.

It is confidently expected that, in addition to the ordinary members, support will be given to this institution by the noblemen and gentlemen resident in, and representing, the counties and boroughs in the mineral districts, as also by the lords of the mineral soil generally, and by parties who have greatly benefited by mining, and possess mining influence. As the avocations of these noblemen and gentlemen will undoubtedly preclude their frequent attendance in a club, it is trusted that they may still honor the proposed institution with their patronage and support, by becoming Life Honorary Members, paying a present subscription of Ten Guineas in lieu of all annual subscriptions, which will entitle them to all the advantages of the institution, and constitute them, *ex facto*, members of the committee, should they desire it.

Subscriptions from mines will entitle any one of their accredited proprietors or agents to the advantages of the institution.

Letters for further information and applications for admission to be addressed to Mr. J. G. Beckwith, 18, Cornhill; to Messrs. Crossman, Sommers, and Co., 33, Threadneedle-street; or to Mr. R. Tredinnick, Three Kings'-court, Lombard-street, London, where detailed prospectuses may be obtained; prospectuses can also be had at the Mining Journal office, 26, Fleet-street.

**EAST COOMBE SILVER AND LEAD MINING COMPANY.**—In 4096 shares, at One Guinea per share.

CONDUCTED ON THE COST-BOOK SYSTEM.

BANKERS.—The National Provincial Bank of England, Barnstaple.

SECRETARY.—Mr. George Chown.

The mines possessed by the company extend upwards of 800 fathoms on the run of the lode, and about 200 fathoms in a cross direction, situate in the parish of Symbridge, near Barnstaple, being held under a lease of 31 years, at 1-15th duty. The lode is parallel with those of the Combarmin Mines, and in every respect similar in their component parts, matrix as well as country (which latter is a kindly killas), and may be worked at an easy cost. The operations of the present company have been confined for the past two years to clearing up the old workings, sinking engine-shafts, extending levels, &c.; but it being deemed essentially necessary to erect a steam-engine, with the view of putting the mine to a greater depth, as also proving the north lode, it has been determined to extend the number of shares to 4096, with a payment of One Guinea per share, a considerable proportion of which will be taken by the present proprietors. It may be observed, that the mines may be worked for the next six or eight months without the aid of steam-power, there being a good water-wheel erected, but which can only be partially applied, from the top water falling off; during which time the north lode (the most promising one of the lode) can be intersected at the 10 and 30 fathom levels, and driven on at those points. The proprietors have lately secured a valuable addition to the seat, which considerably enhances the value of the property.

In working the mines, it is intended to adhere strictly to the Cost-book System; a finance committee being appointed, who will have control over the funds of the company, and see to their proper application; such committee to be appointed at the first meeting of the adventurers, and remain in office two months, when they shall be required to furnish a cash account of receipts and expenditure, as also the assets and liabilities, thus precluding the possibility of any adventurer being rendered liable beyond the two months' cost. The committee so appointed to be eligible to be re-elected, or others appointed in their stead, at any two-monthly meeting. The ore hitherto raised has been rich for silver, its value being £15 to £20 per ton. The mine is in a good working condition, with water-wheel, flat-roads, pumps, &c., the value of the machinery being estimated at £1200. Parties who may take shares in the company, will have them free of any liabilities up to the present time.

The annexed report of Captain Williams, will convey general information as to the prospects which the mine presents.

**REPORT.**  
I have inspected the East Coombe Mine, and beg to hand you my report. The mine is located in a stratum of rich blue killas. The lode is parallel to those of the celebrated Combarmin Mine, and in similar strata of ground. A considerable quantity of ore appears to have been taken from the south lode. In the bottom of the 10 fathom level, a good branch of silver-lode ore is going down, and I have no doubt of your having a course of ore in this lode at the next level.

The north lode, however, in my opinion, is the most kindly one in the sett. The indications at the adit being of the most encouraging nature, I strongly recommend this lode being cut, with all possible dispatch, at the 10 and 20 ft. levels; and I confidently believe you will find it rich when intersected. The machinery is in first rate order, and well laid out. It is my firm conviction, that if a steam-engine were erected, and the working vigorously prosecuted, considerable returns might at once be made. J. WILLIAMS.

Applications for shares to be made to J. P. Gilbert, Esq., Manager, National Provincial Bank, Barnstaple; Mr. John Westcott, East Coombe Mining Office, Symbridge; and the secretary, Mr. George Chown, from whom prospectuses may be had.

(PROVISIONALLY REGISTERED.)

**ALBION PLATE GLASS COMPANY.**

Capital £100,000, in 4000 shares, of £25 each.

Preliminary deposit, 2s. 6d. per share, until complete registration.

TRUSTEES.  
MATTHEW FORSTER, Esq., M.P., New City Chambers.  
CAPT. CHARLES EDWARD MANGLES, Guildford.  
GEORGE FREDERICK YOUNG, Esq., Lambhouse.

DIRECTORS.  
HENRY CORNFORD, Esq., Old Palace, Richmond.  
JOHN KNILL, Esq., London Bridge Wharf.  
SAMUEL SHARP, Esq., Albany, near Guildford.  
CORNELIUS SMITH, Esq., Gracechurch-street.  
EDWARD SMITH, Esq., Old Broad-street.  
FREDERICK YOUNG, Esq., Bromley, Middlesex.

MANAGERS.—Mr. Henry Howard.

ADDRESSES.  
Wm. Bagshaw, Esq., Coleman-street; John Adams Carter, Esq., Leadenhall-street.

BANKERS.—The Commercial Bank of London.

SOLICITORS.—Messrs. Shearman and Slater, No. 23, Great Tower-street.

SECRETARY.—John Morris, Esq., No. 58, Fenchurch-street.

SECRETARY.—Henry Shearman, Esq.

In the year 1826 the manufacture of plate glass in Great Britain was about 7000 feet per week; the sales are now about 70,000 feet per week, exclusive of foreign. The demand is increasing beyond all precedent; and, although some of the houses are working night and day, the supply of good quality is still inadequate for home consumption alone.

From 1827 to 1847, the reduction in price has been from 12s. to 5s. 6d. per 60 ft. c.

From 1827 to 1847, the increase in consumption has been from 3000 to 70,000 feet per week, or 1400 per cent.

The company has been formed to afford a better, and, if possible, a sufficient supply, and thereby to revive and encourage the export trade in this article, which might be carried to an enormous extent, but which, in the present state of supply and demand, is grievously neglected.

The profit now realised in this manufacture in England is about 20 per cent., but the present company, by a superior application of machinery, and the adoption of important scientific improvements (to be patented for their special benefit), will be enabled not only to construct their works at little more than half the cost of similar undertakings, but also to carry them on at a decreased permanent charge; and, by these means, this company will be placed in a position of vast superiority over any existing establishment.

Freely, as this rising trade now is, from Excise restrictions, and looking at the extraordinary results that have already arisen, it is impossible to foresee either the extent to which this manufacture may be carried, or the full amount of advantage to be derived from its more extensive development. Nor is it unworthy of remark, that, in this country, slabs of the finest plate glass may be produced at a cost considerably below that of statutory marble.

The locality of London presenting peculiar advantages, arrangements have been made for the purchase of an eligible site of freehold land on the banks of the Thames, and other important steps are taken, whereby the works may be completed, and in full working operation within 12 months.

This undertaking is brought forward, not only as a safe and extremely valuable investment for capital, but also as one which the public interest imperatively demands, and a large amount being already subscribed, the remainder will be apportioned to respectable parties, who may apply to the secretary, at the offices of the company, No. 4, Railway-place, Fenchurch-street, where, or of the solicitors, No. 23, Great Tower-street, prospectuses and any further information may be obtained.

**IMPORTANT TO ENGINEERS AND INVENTORS.**

On Friday, the 27th August, a STAMPED EDITION of the PATENT JOURNAL will be published, and on each succeeding Friday, to go free by post, price 7d.—containing Specifications of Patents, with copious engravings—Articles on Scientific Subjects—Registrations—Lists of Patents, weekly, &c.

"To Engineers, Inventors, and, indeed, to all interested in the arts, no work can be more useful; whilst, to inventors, it is indispensable."—*Manchester Guardian.*  
A Specimen Number will be sent free of charge.—Send a Post-office order, payable to Edward John Payne, Esq., 99, Chancery-lane, when the Patent Journal will be forwarded on Friday evening. For the year, £1 4s.; half-year, 12s. 6d.; quarter, 7s.  
Patent Office, Barlow, Le Capelain, and Payne, 99, Chancery-lane.

**IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.**

Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their

**IMPROVED PATENT ELASTIC METALLIC PISTONS.**

The PRINCIPAL FEATURE AND ADVANTAGE OF THIS IMPROVEMENT is—  
1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.

2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.

3. It takes the LEAST possible SPACE, and it is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PISTON yet known, for the above reasons.

Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

**IMPORTANT TO RAILWAY AND STEAM NAVIGATION COMPANIES, MANUFACTURERS, AND ENGINEERS.**

W. BROTHERTON AND CO'S

PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS

OF MACHINERY.

W. B. & CO. have the pleasure to state, that the above article is extensively used in Her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engine. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers.

Further particulars can be had, and testimonials seen, by application to the manufacturers.

W. BROTHERTON & CO., Hungerford Wharf, Strand, London.

N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

**FLEXIBLE HOSE-PIPES FOR LOCOMOTIVE ENGINES,**

RAILWAY CRANES, FIRE-ENGINES, GAS, &c.

PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND TUBING

OF EVERY DESCRIPTION.

These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.

FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.

VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer, JAMES LYNNE HANCOCK,

Goswell Mews, Goswell-road, London.

**THE PATENT OFFICE AND DESIGNS REGISTRY,**

No. 310, STRAND, LONDON.

INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATION OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute. Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

**OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN,**

J. MURDOCH (successor and late assistant to Mr. Hebert)

INFORMS INVENTORS AND PATENTEES, that, at his OFFICE, they can obtain

REFERENCE TO A CLASSIFIED LIST OF PATENTS,

(THE ONLY ONE EXISTING), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.

SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.

FINISHED and WORKING DRAWINGS executed with accuracy and dispatch.

Just published, Part I.,

**COMBUSTION OF COAL, CHEMICALLY & PRACTICALLY**

CONSIDERED. With coloured plates.

By CHARLES WYE WILLIAMS, Esq.

London: Simpkin, Marshall, & Co., and J. Wende—Birmingham: Wrightson & Webb.

Just published, price 7s. 6d.,

**INVENTIONS, IMPROVEMENTS, AND PRACTICE OF**

BENJAMIN THOMPSON, in the combined character of Colliery Engineer and

General Manager, with some interesting particulars relative to Watt's Steam-Engine, and a short Treatise on the Coal Trade Regulation.

Newcastle: M. and M. W. Lambert, 69, Grey-street.—London: John Weale, 59, High

Holborn; and at the Office of the Mining Journal, 26, Fleet-street.

**TO ENGINEERS AND BOILER-MAKERS.**

**LAP-WELDED IRON TUBES, FOR MARINE AND**

**LOCOMOTIVE STEAM-BOILERS,**

**TUBES FOR STEAM, GAS, AND OTHER PURPOSES,**

**ALL SORTS OF GAS FITTINGS.**

**THE BIRMINGHAM PATENT IRON TUBE COMPANY,**

42, CAMBRIDGE-STREET, BIRMINGHAM, & SMETWICK, STAFFORDSHIRE.

MANUFACTURE BOILER and GAS TUBES, under an exclusive License from Mr. E. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and warranted not to open in the weld.

42, CAMBRIDGE-STREET, CRESCENT, BIRMINGHAM.

WORKS—SMETWICK, STAFFORDSHIRE.

LONDON WAREHOUSE—No. 68, UPPER THAMES-STREET.

**IMPROVED LIFTING**

**JACKS,**

**MANUFACTURED BY**

**W. AND J. GALLOWAY,**

**KNOTT MILL,**

**MANCHESTER.**

\* \* The attention of parties who employ

**Lifting Jacks,**